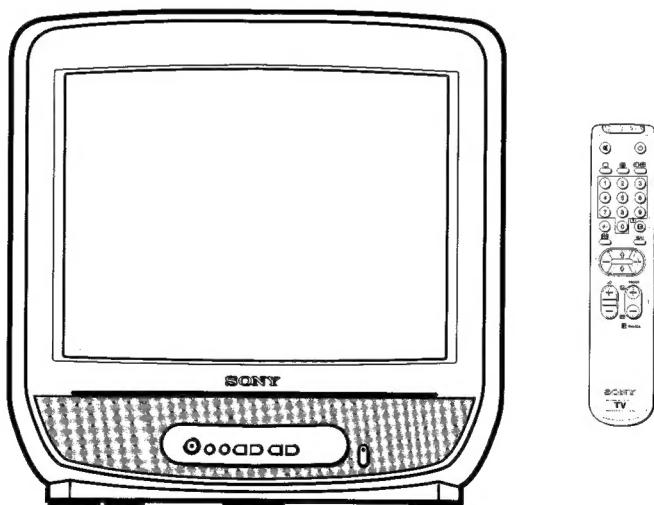


# SERVICE MANUAL

**BE-4 CHASSIS**

| MODEL            | COMMANDER | DEST.   | CHASSIS NO. | MODEL            | COMMANDER | DEST.   | CHASSIS NO. |
|------------------|-----------|---------|-------------|------------------|-----------|---------|-------------|
| <b>KV-M1450A</b> | RM-836    | Italian | SCC-H64E-A  | <b>KV-M1450E</b> | RM-836    | Spanish | SCC-H66C-A  |
| <b>KV-M1451A</b> | RM-836    | Italian | SCC-H64D-A  | <b>KV-M1451E</b> | RM-836    | Spanish | SCC-H66D-A  |
| <b>KV-M1450B</b> | RM-836    | French  | SCC-H65C-A  | <b>KV-M1450K</b> | RM-836    | OIRT    | SCC-H52E-A  |
| <b>KV-M1451B</b> | RM-836    | French  | SCC-H65D-A  | <b>KV-M1451K</b> | RM-836    | OIRT    | SCC-H52D-A  |
| <b>KV-M1450D</b> | RM-836    | AEP     | SCC-H46E-A  | <b>KV-M1450U</b> | RM-836    | UK      | SCC-H50D-A  |
| <b>KV-M1451D</b> | RM-836    | AEP     | SCC-H46D-A  | <b>KV-M1451U</b> | RM-836    | UK      | SCC-H50C-A  |



TRINITRON® COLOR TV  
**SONY**®



| ITEM MODEL | Television System | Channel Coverage   | Color System                                       |
|------------|-------------------|--|--|
| Italian    | B/G/H             | VHF: E2-E12, S1-S20<br>UHF: E21-E69  | PAL  |
| French     | B/G/H, L          | VHF: E2-E12, S1-S20, F2-F10, B-Q<br>UHF: E21-E69, S21-S41, F21-F69                 | PAL, SECAM   |
| AEP        | B/G/H             | VHF: E2-E12, S1-S20<br>UHF: E21-E69, S21-S41                                       | PAL, SECAM   |
| Spanish    | B/G/H             | VHF: E2-E12, S1-S20<br>UHF: E21-E69, S21-S41                                       | PAL  |
| OIRT       | B/G, D/K          | B/G VHF: E2-E12 UHF: E21-E69<br>Hyper: S1-S41<br><br>D/K VHF: R01-R12 UHF: R21-R69 | PAL, SECAM<br>NTSC 3.58/4.43<br>(video input only) |
| UK         | I                 | UHF: 21-69   | PAL  |

| MODEL             | Italian | French | AEP | Spanish | OIRT | UK  |
|-------------------|---------|--------|-----|---------|------|-----|
| Power Consumption | 39W     | 39Wh   | 39W | 39W     | 39W  | 50W |

## SPECIFICATIONS

Picture Tube      Black Trinitron  
                         Approx. 36.8 cm (14 inches)  
                         (Approx. 33.7 cm picture measured diagonally)  
                         90° -deflection

### Input/Output Terminals

#### [INPUTS]

- 1 21-pin connector (CENELEC standard)
  - audio / video input
  - RGB input

#### [OUTPUTS]

- Ω Headphone jack : minijack

Sound output      2W (RMS)

                        3W (music power)

Dimensions          367x369x410 mm approx.

Weight               Approx. 10.0kg

Supplied accessories RM-836 Remote Commander (1)

                        IEC designated batteries (2)

                        Aerial (1)

Other features      TELETEXT (for KV-M1451A/M1451B/M1451D/M1451E/M1451K/M1451U only)

**[RM-836]**

|                       |                                       |
|-----------------------|---------------------------------------|
| Remote control system | infrared control                      |
| Power requirements    | 3V dc (2 batteries) R6 (size AA)      |
| Dimensions            | Approx. 210x45x24 mm (w/h/d)          |
| Weight                | Approx. 90g (Not including batteries) |

Design and specifications are subject to change without notice.

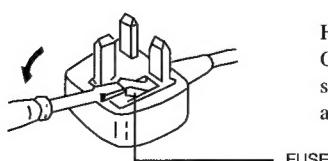
| Item \ Model name | KV-M1450A<br>KV-M1451A | KV-M1450B<br>KV-M1451B | KV-M1450D<br>KV-M1451D | KV-M1450E<br>KV-M1451E | KV-M1450K<br>KV-M1451K | KV-M1450U<br>KV-M1451U |
|-------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| Pal Comb          | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| PIP               | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| RGB Priority      | ON                     | ON                     | ON                     | ON                     | ON                     | ON                     |
| Scart 1           | ON                     | ON                     | ON                     | ON                     | ON                     | ON                     |
| Scart 2           | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Front in (3)      | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Scart 4           | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Projector         | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| AKB in 16:9 mode  | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Norm B/G/H        | ON                     | ON                     | ON                     | ON                     | ON                     | OFF                    |
| Norm I            | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | ON                     |
| Norm D/K          | OFF                    | OFF                    | OFF                    | OFF                    | ON                     | OFF                    |
| Norm AUS          | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Norm L            | OFF                    | ON                     | OFF                    | OFF                    | OFF                    | OFF                    |
| Norm SAT          | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Norm M            | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    | OFF                    |
| Language Preset   | Italian                | French                 | German                 | Spanish                | OIRT                   | English                |

### **WARNING ( KV-M1450U/M1451U only )**

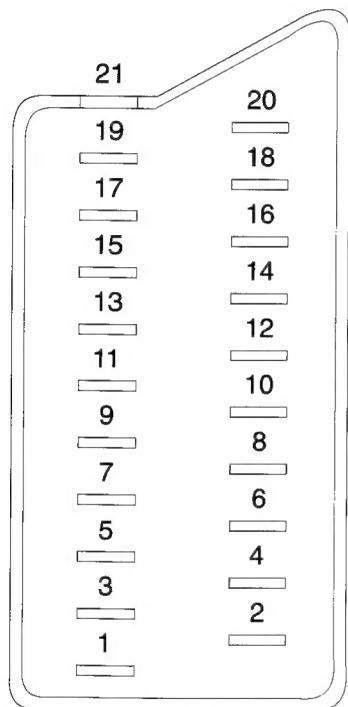
The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by ASTA to BS 1362, ie one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.  
Open the fuse compartment with the screwdriver blade and replace the fuse.

21 pin connector (  )

| Pin No |   | Signal                       | Signal level   |
|--------|---|------------------------------|--|
| 1      | ○ | Audio output B (right)       | Standard level: 0.5Vrms<br>Output impedance:less than 1kohm*   |
| 2      | ○ | Audio input B (right)        | Standard level:0.5Vrms<br>Input impedance:More than 10kohms*   |
| 3      | ○ | Audio output A (left)        | Standard level:0.5Vrms<br>Output impedance:less than 1kohm*  |
| 4      | ○ | Ground (audio)               |  |
| 5      | ○ | Ground (blue)                |  |
| 6      | ○ | Audio input A (left)         | Standard level:0.5Vrms<br>Input impedance:More than 10kohms*   |
| 7      | ○ | Blue input                   | 0.7V±3dB, 75ohms, positive   |
| 8      | ○ | Function select (AV control) | High state (9.5—12V):Part mode<br>Low state (0—2V):TV mode<br>Input impedance:More than 10kohms<br>Input capacitance:Less than 2nF |
| 9      | ○ | Ground (green)               |  |
| 10     | ○ | Open                         |  |
| 11     | ○ | Green                        | Green signal:0.7V±3dB,<br>75ohms, positive   |
| 12     | ○ | Open                         |  |
| 13     | ○ | Ground(red)                  |  |
| 14     | ● | Ground (blanking)            |  |
| 15     | ○ | Red input                    | 0.7V±3dB, 75ohms, positive   |
|        | — | (S signal) croma input       | 0.3V±3dB, 75ohms, positive   |
| 16     | ○ | Blanking input (Ys signal)   | High state (1—3V)<br>Low state (0—0.4V)<br>Input impedance:75ohms  |
| 17     | ○ | Ground (video output)        |  |
| 18     | ○ | Ground (video input)         |  |
| 19     | ○ | Video output                 | 1V±3dB, 75ohms, positive<br>Sync:0.3V(-3, +10dB)   |
| 20     | ○ | Video input                  | 1V±3dB, 75ohms, positive<br>Sync:0.3V(-3, +10dB)   |
|        | — | Video Input/Y (S signal)     | 1V±3dB, 75ohms, positive<br>Sync:0.3V(-3, +10dB)   |
| 21     | ○ | Common ground (plug, shield) |  |

○ Connected     ● Not Connected (open)     \* at 20Hz - 20kHz

## TABLE OF CONTENTS

| <u>Section</u>  | <u>Title</u> | <u>Page</u>   | <u>Section</u> | <u>Title</u> | <u>Page</u> |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
|---|--------------|---|----------------|--------------|-------------|----|--|----|------------------------------|--|--|--|--|--|-------------------------|----|---------------------------------------|--|--|--|--|--|----|------------------------|----|---|----|------------------|----|-------------------------------|--|--|--|--|--|-----------------------------------|----|-------------------------|----|--|----|
| <b>1. GENERAL</b>   |              |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| Getting Started .....   | 7            | <b>5. DIAGRAMS</b>                                      |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| TV Operations .....   | 8            | 5-1. Block Diagram .....                                | 25             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| Teletext Operation .....  | 9            | 5-2. Circuit Boards Location .....                      | 29             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| MENU Operation .....  | 9            | 5-3. Schematic Diagrams and Printed Wiring Boards ..... | 29             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| Optional Connections .....  | 12           | * A Board .....   | 33             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| Additional Information .....  | 13           | * C Board .....   | 39             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| <b>2. DISASSEMBLY</b>   |              |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 2-1. Rear Cover Removal .....   | 14           | 5-4. Semiconductors .....                               | 41             |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 2-2. Service Position .....   | 14           | <b>6. EXPLODED VIEWS</b>                                |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 2-3. Picture Tube Removal .....   | 15           | 6-1. Chassis and Picture Tube .....                     |                |              |             |    |  | 42 | <b>3. SET-UP ADJUSTMENTS</b> |  |  |  |  |  | 3-1. Beam Landing ..... | 16 | <b>7. ELECTRICAL PARTS LIST</b> ..... |  |  |  |  |  | 44 | 3-2. Convergence ..... | 17 | 3-3. Screen (G2), Drive, White Balance,<br>Sub Color and Sub Brightness ..... | 19 | 3-4. Focus ..... | 19 | <b>4. CIRCUIT ADJUSTMENTS</b> |  |  |  |  |  | 4-1. Electrical Adjustments ..... | 20 | 4-2. Test Mode 2: ..... | 21 | 4-3. BE-4 Self Diagnostic Software ..... | 23 |
| 6-1. Chassis and Picture Tube .....   |              |   |                |              |             | 42 |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| <b>3. SET-UP ADJUSTMENTS</b>  |              |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 3-1. Beam Landing .....   | 16           | <b>7. ELECTRICAL PARTS LIST</b> .....                   |                |              |             |    |  | 44 |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 3-2. Convergence .....  | 17           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 3-3. Screen (G2), Drive, White Balance,<br>Sub Color and Sub Brightness ..... | 19           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 3-4. Focus .....  | 19           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| <b>4. CIRCUIT ADJUSTMENTS</b>   |              |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 4-1. Electrical Adjustments .....   | 20           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 4-2. Test Mode 2: .....   | 21           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |
| 4-3. BE-4 Self Diagnostic Software .....                                      | 23           |   |                |              |             |    |  |    |                              |  |  |  |  |  |                         |    |                                       |  |  |  |  |  |    |                        |    |   |    |                  |    |                               |  |  |  |  |  |                                   |    |                         |    |  |    |

### CAUTION

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.**

### WARNING !!

AN ISOLATING TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD, DUE TO A LIVE CHASSIS. THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED ! ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

### ATTENTION !!

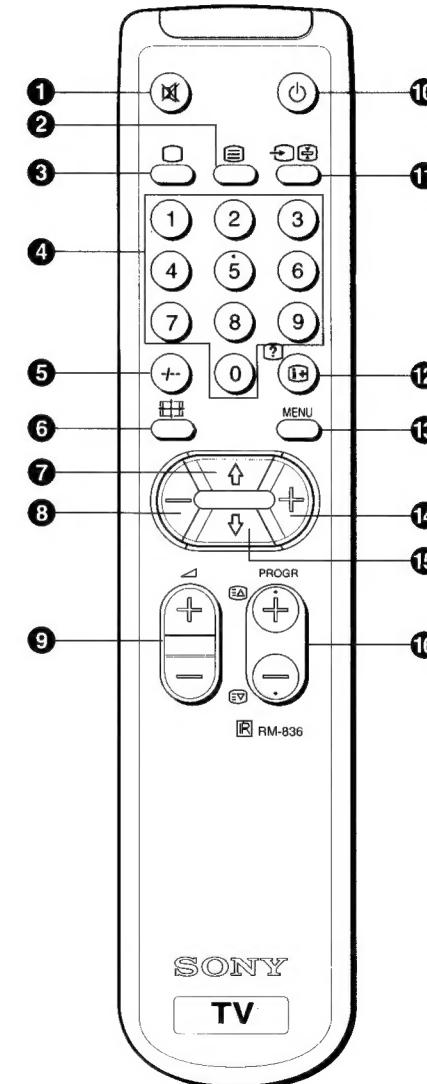
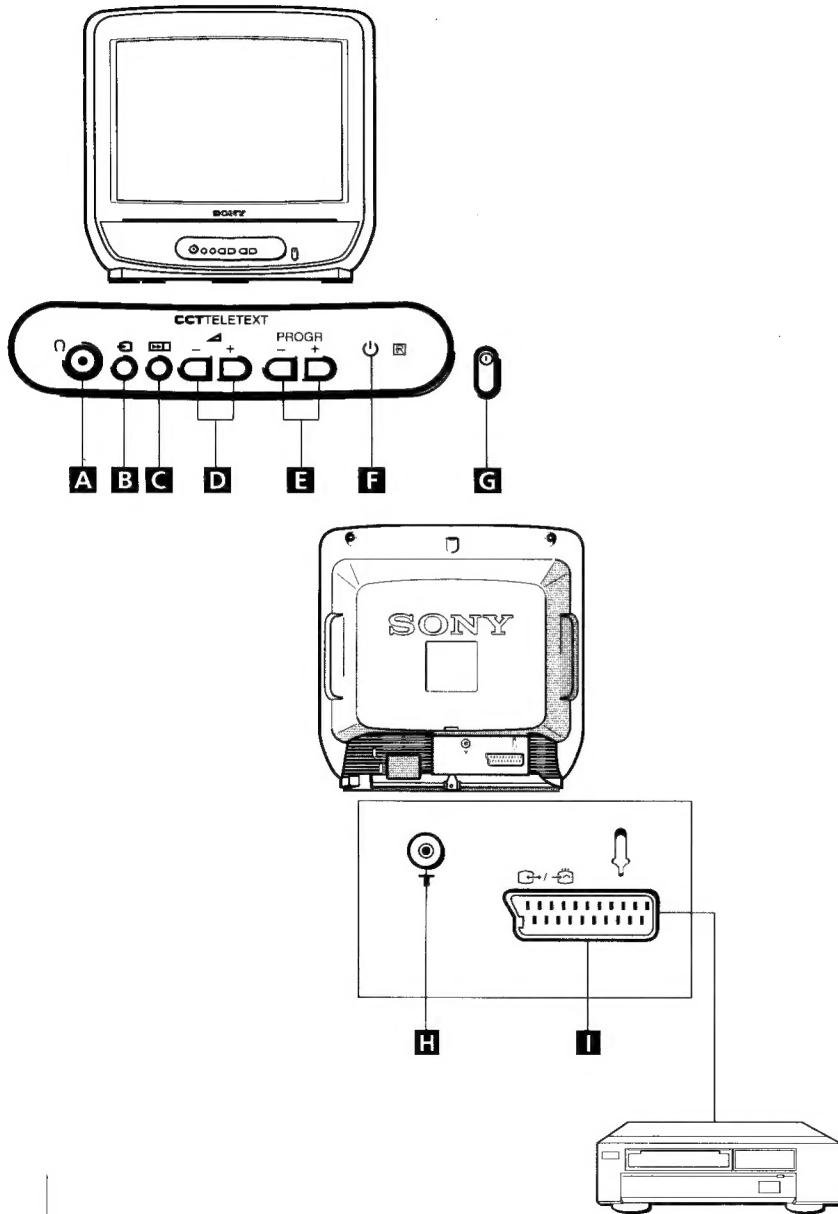
**AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHASSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISE LORS DE TOUT DEPANNAGE. LE CHASSIS DE CE RECEPTEUR EST DIRECTEMENT RACCORDE A L'ALIMENTATION SECTEUR.**

### ATTENTION AUX COMPOSANTS RELATIFS A LA SECURITE !!

**LES COMPOSANTS IDENTIFIES PAR UNE TRAME ET PAR UNE MARQUE ! SUR LES SCHEMAS DE PRINCIPE, LES VUES EXPLOSERES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SECURITE DU FONCTIONNEMENT, NE LES remplacer que par des composants SONY dont le numero de piece est indique dans le present manuel ou dans des suppléments publies par SONY.**

## SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

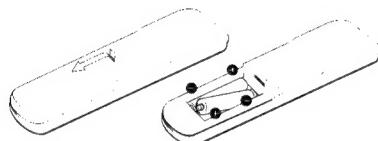


## Getting Started

Please open the flap at the front and at the back of the Instruction Manual for illustrations of the TV set and the Remote Commander. Letters in boxes refer to the buttons on the TV set, numbers in circles to the buttons on the Remote Commander.

### Step 1

#### Inserting the Batteries into the Remote Commander



Always remember to dispose of used batteries in an environmental friendly way.

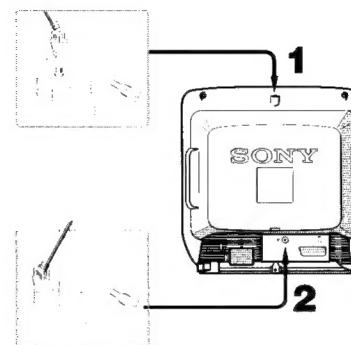
### Step 2

#### Connecting the Aerial

(If you are connecting a VCR, skip to step 3).

Connect an external aerial to the socket H.

Where an external aerial is not available connect the indoor aerial supplied:



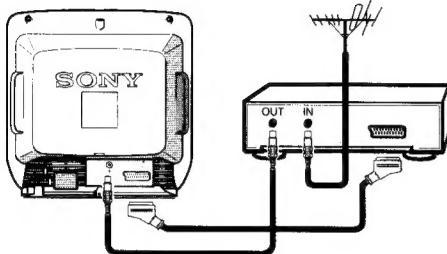
**1** Insert the supplied aerial into the opening on top of the set.

**2** Connect the aerial to the socket H on the rear of the set.

**3** Adjust the aerial for optimum reception.

### Step 3

#### Connecting a VCR



We recommend that you tune in the signal to programme number "0".  
For details see "Presetting Channels Manually" on page 31.

### Step 4

#### Presetting Channels Automatically

TV searches for all available channels.  
If manual tuning is preferred see Menu option - Presetting Channels Manually.



**1** Plug into mains.  
Depress power switch **G** on TV set.

**2** Press and hold **C** on TV set for 2 seconds.  
Auto tuning starts and screen shows.

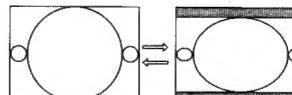
When Auto tuning stops, the programme position 1 is displayed.

### TV Operation

#### TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander (numbers in circles). All basic functions are also available on the TV set (letters in boxes).

| To                           | Press   |
|------------------------------|---|
| Switch on                    | <b>G</b> on TV  |
| Switch off temporarily       | <b>10</b><br><i>TV is now in standby mode, <b>F</b> indicator <b>F</b> on TV lights.</i>  |
| Switch on again              | <b>3</b> , PROGR +/- <b>E</b> or any number button <b>4</b>   |
| Switch off completely        | <b>G</b> on TV<br><i>To save energy we recommend switching off completely when TV is not in use.</i>  |
| Select programmes            | PROGR +/- <b>E</b> or number buttons <b>4</b><br><i>For double digit numbers press -/- <b>5</b> then the number e.g. For 23, press -/- <b>5</b> then 2 and 3.</i> |
| Display the programme number | <b>12</b><br><i>Press again to make programme number disappear.</i>   |
| Adjust the volume            | <b>+/-</b> <b>D</b>   |
| Mute the sound               | <b>1</b><br><i>Press again to restore sound.</i>  |
| View video input             | <b>11</b> <b>B</b><br><i>Press again to return to TV programme.</i>   |
| View programmes in 16:9 mode | <b>6</b><br><i>Press again to return to 4:3 mode.</i>   |



Note: **6** is to be used to optimise the viewing of 16:9 signals which will be available in the future.

## Teletext Operation (only for KV-M1451D)

### Viewing Teletext

Teletext is an information service broadcast by TV stations.

**1** Select the channel which carries the teletext service you wish to receive.

**2** Press **2** to switch on teletext.

**3** Input three digits for the page number using the programme number buttons **4** or PROGR +/- **16**

**4** Press **3** to switch off teletext.

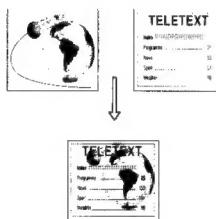
Teletext errors may occur if the broadcasting signals are weak

### Using Other Teletext Functions

#### Superimposing teletext on the TV

Press **2** once in teletext mode or twice in TV mode to superimpose teletext on the TV screen.

Press **2** again to cancel superimposing.



#### Freezing a teletext subpage

Press **11** (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.

Press **11** to cancel HOLD and allow update to continue.

#### Revealing concealed information (eg: answers to a quiz).

Press **12** to reveal information.

Press again to conceal the information.

#### Using colour buttons to access pages

When the colour coded menu appears at the bottom of a page, press the colour button (red, green, blue or yellow) **3** **7** **13** **14** to access the corresponding page.

## MENU Operation

Use buttons on Remote Commander to control Menu screen.

|                       |                            |                                  |
|-----------------------|----------------------------|----------------------------------|
|                       |                            | Green<br>Scroll up               |
| MENU                  | Red –<br>decrease / select | Yellow<br>increase / confirm(OK) |
| Menu Screen<br>on/off |                            | Blue<br>Scroll down              |

### Adjusting the Picture

**1** Press MENU **13**.

**2** Press green **7** or blue **15** button to select the item you wish to change.

| Symbol | Item       | - | Effect | +        |
|--------|------------|---|--------|----------|
|        | Picture    |   | Less   | More     |
|        | Colour     |   | Less   | More     |
|        | Brightness |   | Darker | Brighter |

**3** Press red **8** or yellow **10** button to change levels.

**4** Press MENU **13** to return to normal TV screen.

To reset to factory preset picture levels, press green **7** or blue **15** button to select **><** and press yellow (OK) **13** button.

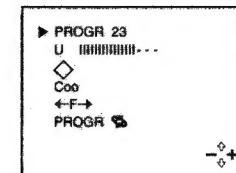
## Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.

- 1 Press MENU ⑬.
- 2 Press green ⑦ or blue ⑯ button to select ⏻
- 3 Press red ⑧ or yellow ⑭ button to set time delay.  
0.00 (OFF) 0.30 1.00 1.30 .... 4.00
- 4 Press MENU ⑬ to return to normal TV screen.  
When watching TV, press ⑬ ⑫ to display time remaining.

## Presetting Channels Manually

Up to 60 programme positions are available for presetting channels.



- 1 Press MENU ⑬.
- 2 Press green ⑦ or blue ⑯ button to select ⌂ and press yellow (OK) ⑭ button.
- 3 Select programme number using PROGR + / - ⑯ ⑮ or the number buttons ④.
- 4 Press green ⑦ or blue ⑯ button to select TV system if necessary and press red ⑧ or yellow ⑭ button to change TV system.
- 5 Press green ⑦ or blue ⑯ button to select tuning bar and press red ⑧ or yellow ⑭ button to start channel search. When a channel is found the tuning bar stops moving and you see the picture.
- 6 If you want to store, press green ⑦ or blue ⑯ button to select ⌂ and press yellow (OK) ⑭ button. If you don't want, press red ⑧ or yellow ⑭ button to continue search.
- 7 Repeat steps 3 to 6 for all other channels.
- 8 Press MENU ⑬ to return to normal TV screen.

## **Skipping Programme Positions**

You can skip unused programme positions when selecting channels with the PROGR +/- **⑩ F** buttons. You can still select them, however, using the number buttons **④**.

- 1** Press MENU **⑬**.
- 2** Press green **⑨** or blue **⑮** button to select  $\Rightarrow$  and press yellow **⑭** button.
- 3** Select programme number you want to skip using PROGR +/- **⑩ F** button or number buttons **④**.
- 4** Press green **⑦** or blue **⑯** button to select Coo and press yellow (OK) **⑭** button.
- 5** Press green **⑦** or blue **⑯** button to select  $\diamond$  and press yellow (OK) **⑭** button to store.
- 6** Repeat steps 3 to 5 for other unused programme positions.
- 7** Press MENU **⑬** to return to normal TV screen.

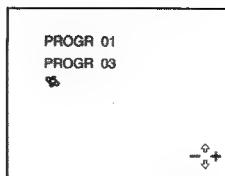
## **Fine-Tuning Channels**

You can fine tune a stored channel.

- 1** Select the channel you wish to fine tune.
- 2** Press MENU **⑬**.
- 3** Press green **⑦** or blue **⑯** button to select  $\Rightarrow$  and press yellow (OK) **⑭** button.
- 4** Press green **⑦** or blue **⑯** button to select  $\leftarrow\rightleftharpoons$  and use red **⑧** or yellow **⑭** button to adjust tuning.
- 5** Press green **⑦** or blue **⑯** button to select  $\diamond$  and press yellow (OK) **⑭** button to store.
- 6** Press MENU **⑬** to return to normal TV screen.

## Exchanging Programme Positions

After tuning you may wish to rearrange the programme positions.



- 1 Press MENU ⑬.
- 2 Press green ⑦ or blue ⑯ button to select  $\Rightarrow$  and press yellow (OK) ⑭ button.
- 3 Press green ⑦ or blue ⑯ button to select PROGR  $\frac{1}{2}$  and press yellow (OK) ⑭ button.
- 4 Press red ⑧ or yellow ⑮ button to select the first programme position.
- 5 Press the blue ⑯ button.
- 6 Press the red ⑧ or yellow ⑮ button to select the second programme position.
- 7 Press blue ⑯ button to select  $\frac{1}{2}$  and press yellow (OK) ⑭ button to exchange.
- 8 Repeat steps 4 to 7 for other programme positions.
- 9 Press MENU ⑬ to return to normal TV screen.

## Optional Connections

### Using 21-pin Connector

Your TV has one 21-pin connector ⑩ on the rear of the set. You can connect optional audio or video equipment to this connector, such as a VCR, video games or a video disc player.

- 1 Press  $\ominus$  ⑪ ⑫ to view the video input signal.
- 2 Press  $\ominus$  ⑪ ⑫ or  $\square$  ⑬ to return to normal TV operation.

## Connecting Headphones

Plug in the headphones to the  $\ominus$  A socket on the front of the TV set. The sound from the speaker is now muted.

## **Additional Information**

# **Troubleshooting**

Here are some simple solutions to the problems which affect the picture and sound.

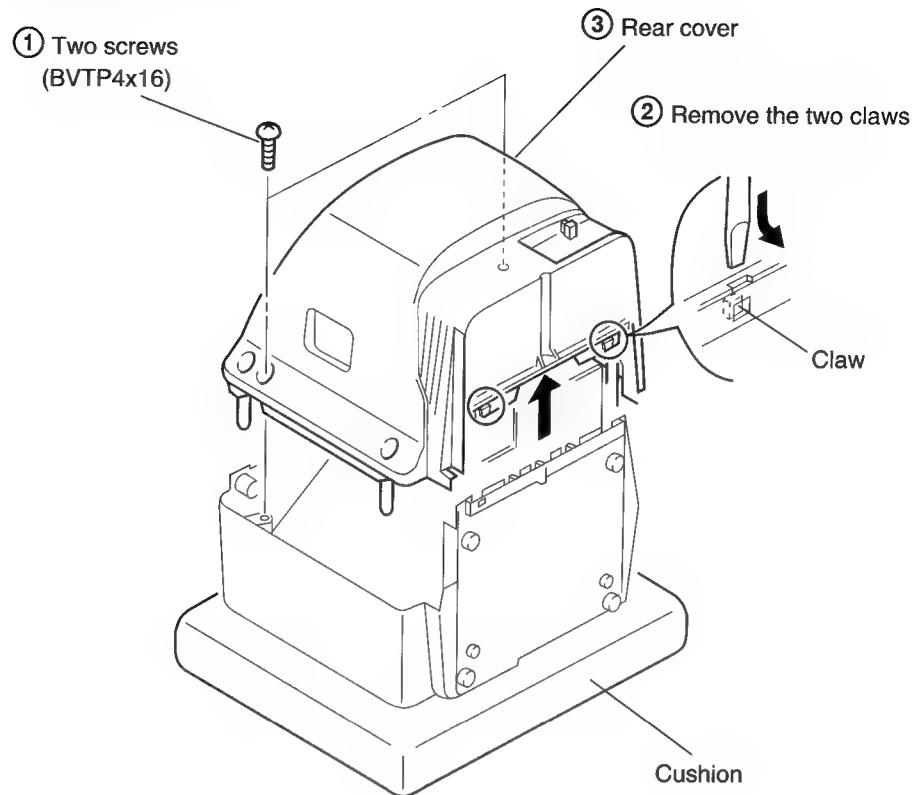
| <b>Problem</b>   | <b>Solution</b>   |
|--|---|
| No picture, screen is dark, no sound                             | <ul style="list-style-type: none"><li>• Plug the TV in.</li><li>• Press  <b>G</b> on the TV.</li><li>• If  indicator <b>F</b> is on press  <b>3</b> or the programme number <b>4</b> on the remote commander.</li><li>• Check the aerial connection.</li><li>• Check that the video source is on.</li><li>• Turn the TV off for 3 or 4 seconds and then turn it on again using  <b>G</b>.</li></ul> |
| Poor or no picture (screen is dark, sound is good)               | <ul style="list-style-type: none"><li>• Press MENU <b>13</b> and adjust brightness picture and colour balance level.</li></ul>  |
| Good picture, no sound   | <ul style="list-style-type: none"><li>• Adjust the volume  +/- <b>D</b>.</li><li>• Disconnect any headphones.</li><li>• If  is displayed on the screen, press  <b>1</b>.</li></ul>  |
| No colour on colour programmes                                   | <ul style="list-style-type: none"><li>• Press MENU <b>13</b> and adjust colour balance.</li><li>• Press MENU <b>13</b> and reset to factory settings.</li></ul>   |
| Distorted picture when changing programmes or selecting teletext | <ul style="list-style-type: none"><li>• Turn off the equipment connected to the 21-pin connector <b>I</b>.</li></ul>  |
| Remote commander does not function                               | <ul style="list-style-type: none"><li>• Replace the batteries.</li></ul>  |

• **If you continue to have these problems, have your TV serviced by qualified personnel.**

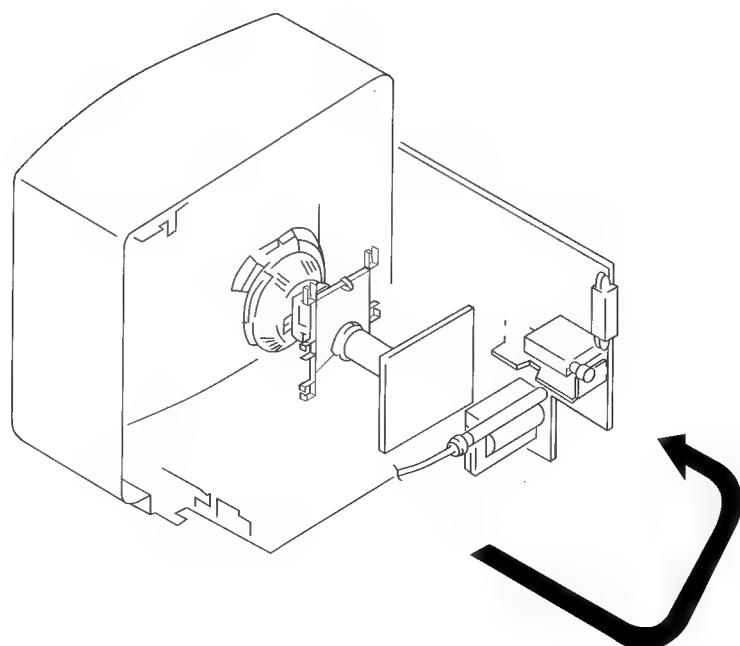
• **NEVER open the casing yourself.**

## SECTION 2 DISASSEMBLY

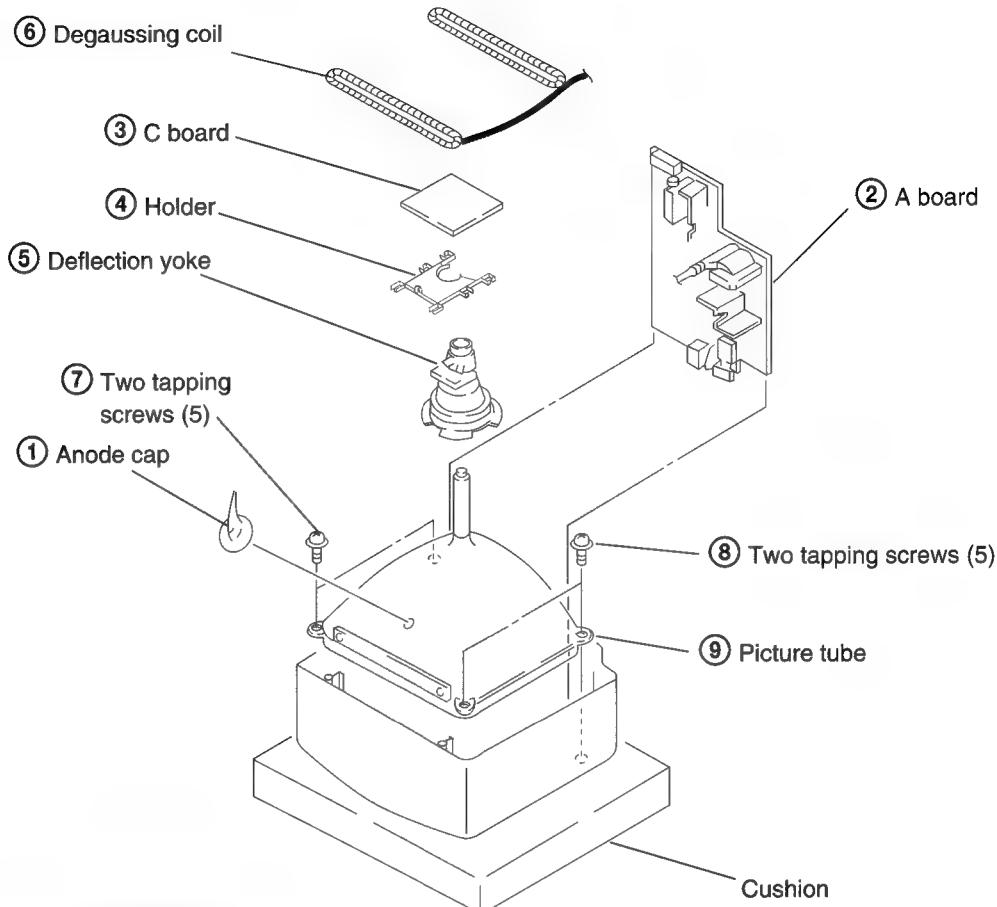
### 2-1. REAR COVER REMOVAL



### 2-2. SERVICE POSITION



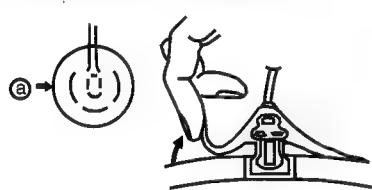
## 2-3. PICTURE TUBE REMOVAL



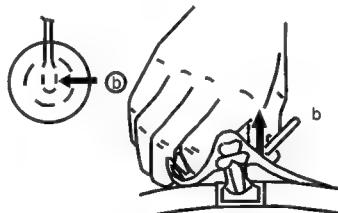
### • REMOVAL OF ANODE-CAP

**Note:** Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

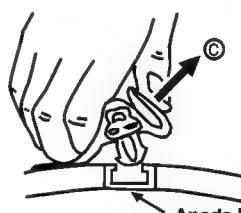
#### \* REMOVING PROCEDURES.



① Turn up one side of the rubber cap in the direction indicated by the arrow (a)



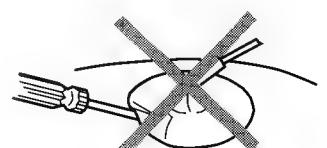
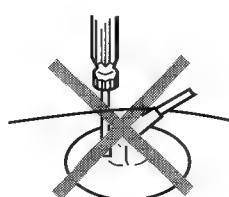
② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)



③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

#### • HOW TO HANDLE AN ANODE-CAP

- ① Don't damage the surface of anode-cap with sharp shaped material !
- ② Don't press the rubber hardly not to hurt inside of anode-caps !  
A metal fitting called as shatter-hook terminal is built into the rubber.
- ③ Don't turn the foot of rubber over hardly !  
The shatter-hook terminal will stick out or damage the rubber.



## SECTION 3

### SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

CONTRAST control ..... 80%  
(or Normal by commander)  
BRIGHTNESS control ..... 50%

Perform the adjustments in the following order:

- Beam Landing
- Convergence
- Screen (G2), Drive, White Balance, Sub Color and Sub Brightness.
- Focus

**Note:** Test Equipment Required.

- Color bar/Pattern Generator
- Degausser
- DC Power Supply
- Digital multimeter
- Oscilloscope

#### Preparation:

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

#### 3-1. BEAM LANDING

Demagnetize with a degausser.

- Input an all white raster signal from the pattern generator.  
CONTRAST } normal  
BRIGHTNESS }
- Switch the raster signal of the pattern generator to Red.
- Move the deflection yoke backward, and adjust with the purity control so that Red is at the center and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 - 3-3)
- Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
- Switch the raster signal to Blue and then Green to confirm the condition.
- When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
- When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

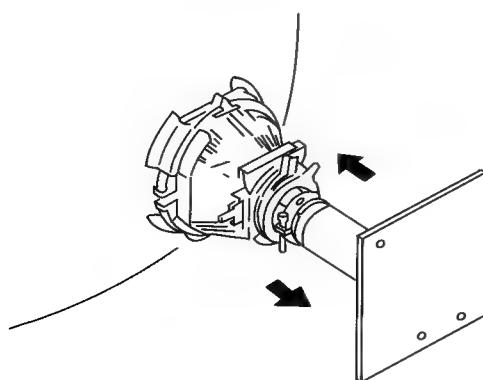


Fig. 3-1

Fig. 3-2

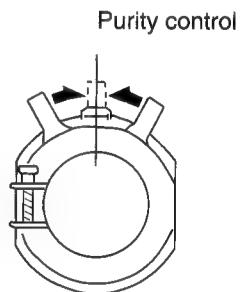


Fig. 3-3

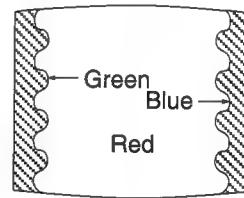
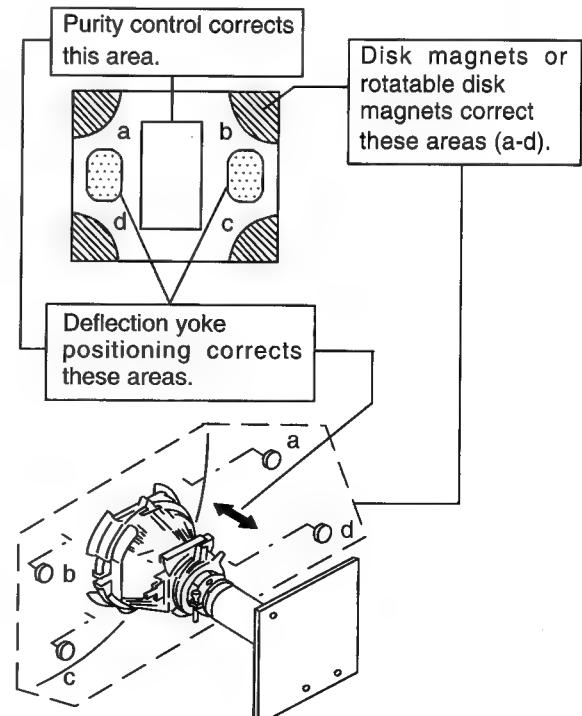


Fig. 3-4

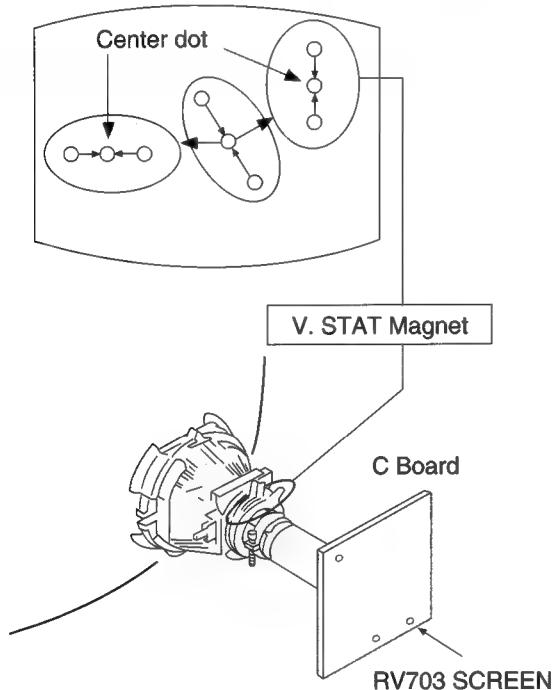


## 3-2. CONVERGENCE

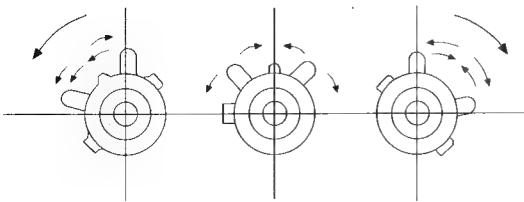
### Preparation:

- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

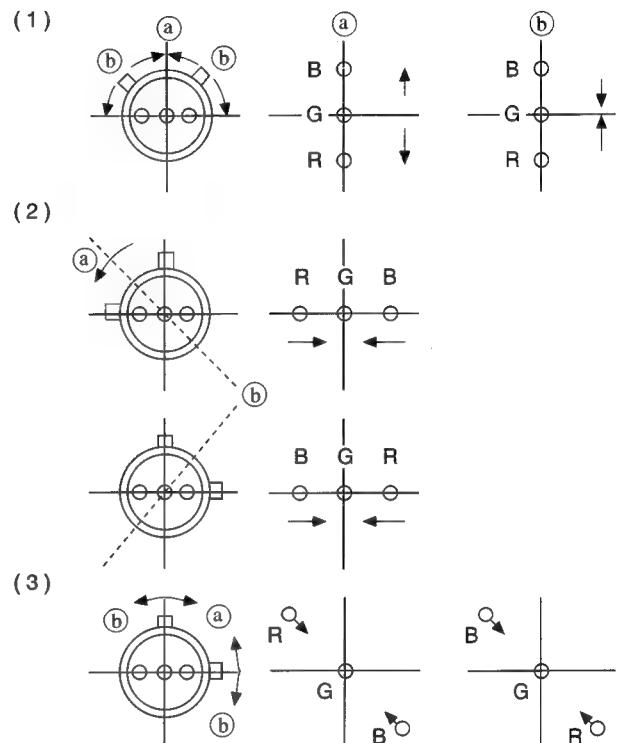
### (1) Horizontal and Vertical Static Convergence



1. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the center of the screen. (Vertical and Horizontal movement)
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



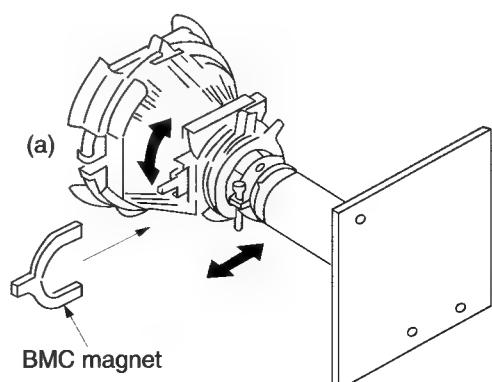
2. When the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

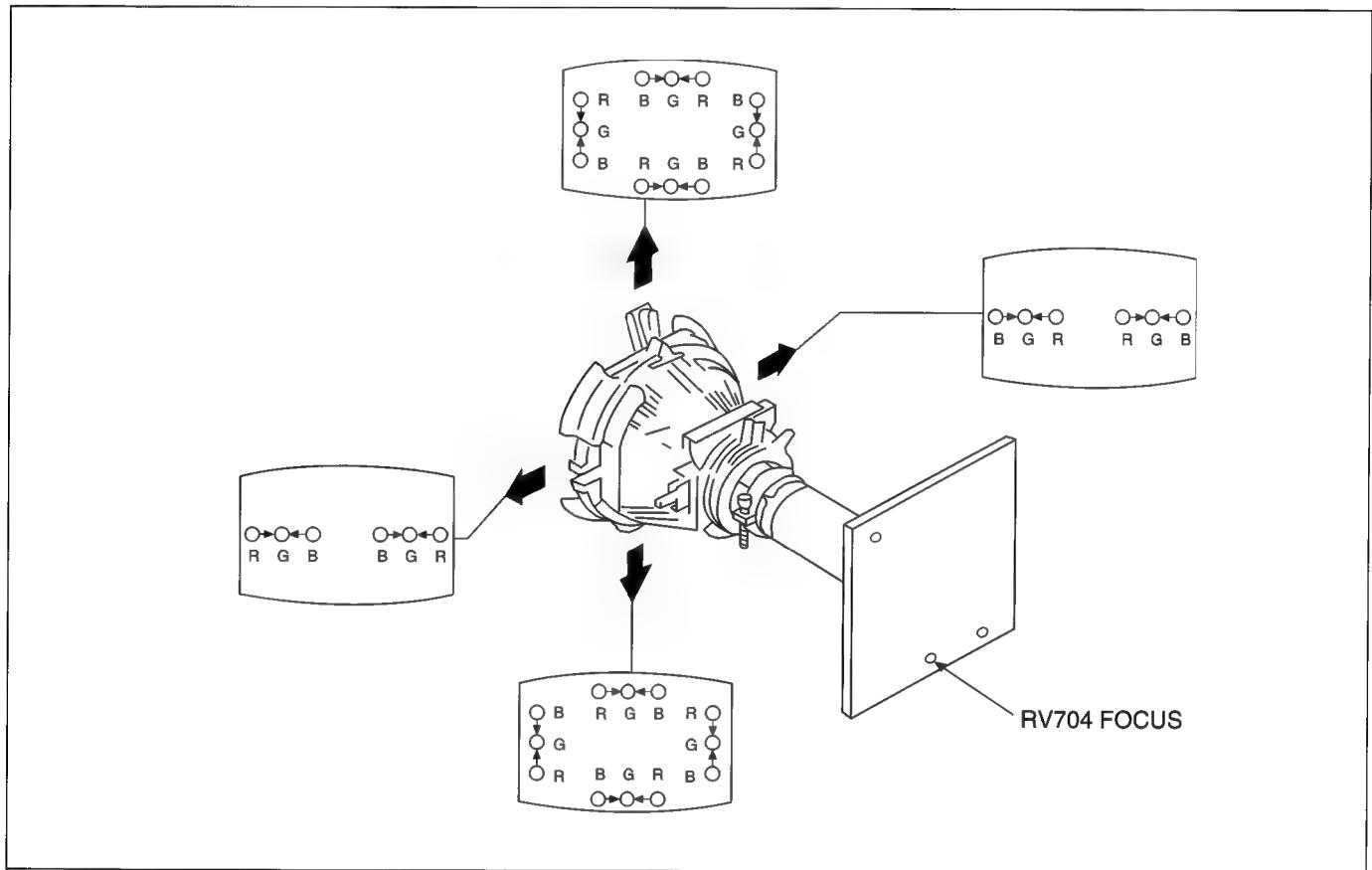
In either case, repeat the Beam Landing Adjustment.



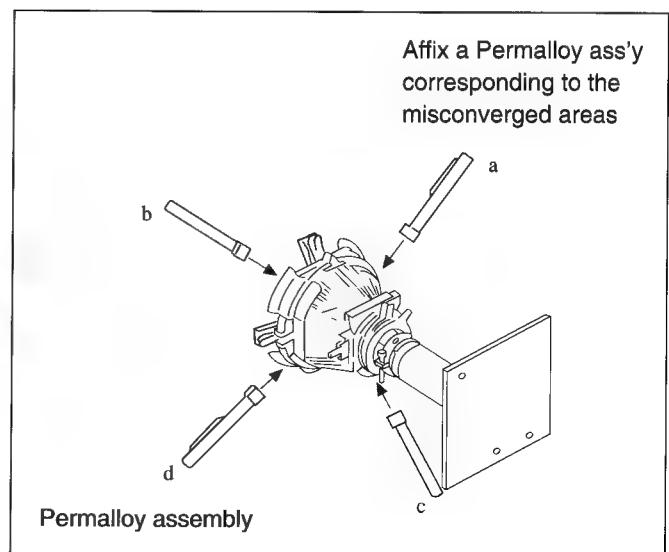
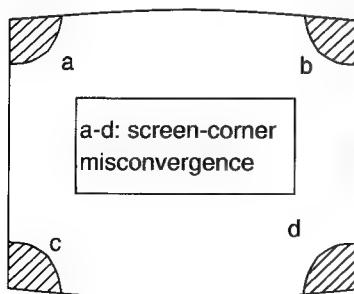
## (2) Dynamic Convergence Adjustment

### Preparation:

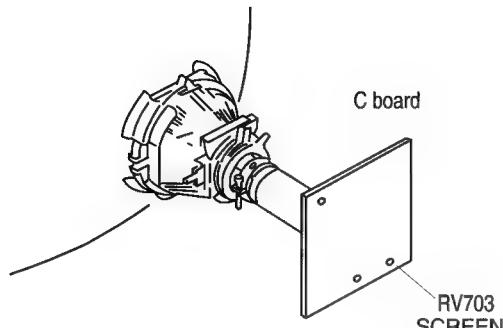
- Before starting to perform the Horizontal and Vertical static convergence adjustment.
- 1. Slightly loosen the deflection yoke screw.
- 2. Remove the deflection yoke spacers.
- 3. Move the deflection yoke for best convergence as shown below.
- 4. Tighten the deflection yoke screw.
- 5. Install the deflection yoke spacers.



## (3) Screen-corner Convergence.



### 3-3. SCREEN (G2), DRIVE, WHITE BALANCE, SUB COLOR and SUB BRIGHTNESS.

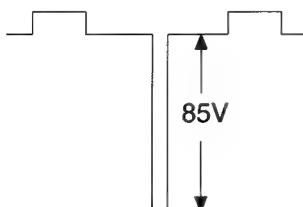


#### Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust RV703 until the Down arrow is displayed.
4. Adjust RV703 until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

#### Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin (7) of J701 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

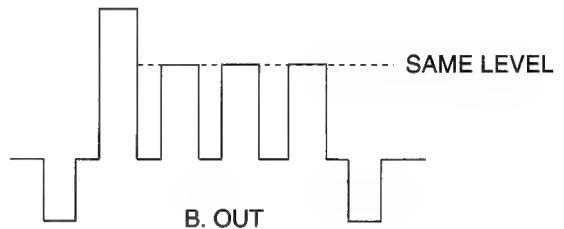


#### White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Color and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

#### Sub Color Adjustment

1. Input a PAL color bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin (5) of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



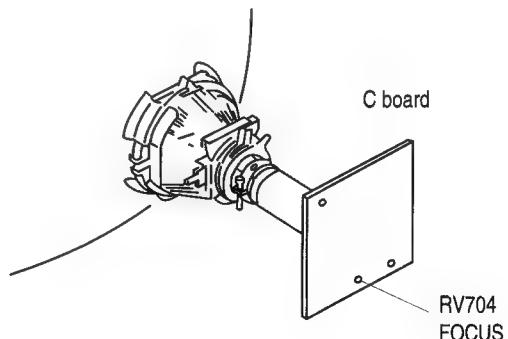
**Note :** If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam color bar signal.

#### Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

### 3-4. FOCUS

Adjust the FOCUS control RV704 so that the whole screen is in best focus.



## SECTION 4

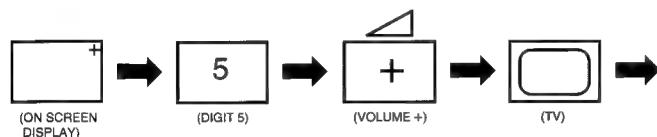
### CIRCUIT ADJUSTMENTS

#### 4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

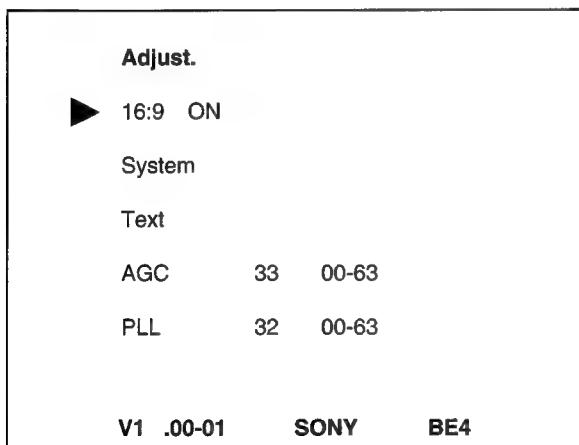
##### HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT--" will appear in the top right corner of the screen  
Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



Software version

4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

| Adjustment   | Set    | Range                       |
|--------------|--------|-----------------------------|
| 16:9 Off     | Select | ON/OFF                      |
| System       | Select | BG-L, BG-DK<br>UK, Eire, BG |
| Text         | Select | EAST/WEST                   |
| AGC          | Adj.   | 00 - 63                     |
| PLL          | Adj.   | 00 - 63                     |
| B&W Delay    | Adj.   | 00 - 63                     |
| Ver Size     | Adj.   | 00 - 63                     |
| Ver, Breath  | 00     | 00 - 63                     |
| Par, Ampl    | 00     | 00 - 63                     |
| Par, Tilt    | 32     | 00 - 63                     |
| V, Linear    | Adj.   | 00 - 63                     |
| Corn, corr   | 00     | 00 - 63                     |
| V, Cen or EW | Adj.   | 00 - 63                     |
| V, Position  | 42     | 00 - 63                     |
| H, Centre    | Adj.   | 00 - 63                     |
| Blue HWB     | Adj.   | 00 - 63                     |
| Green HWB    | Adj.   | 00 - 63                     |
| Red HWB      | Adj.   | 00 - 63                     |

## 4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are available by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST' , press 'TV' or switch the TV into Stand-by mode.

|    |  |
|----|--|
| 00 | Switch 'TT--' Mode off.  |
| 01 | Set picture level to maximum.  |
| 02 | Set picture level to minimum.  |
| 03 | Set volume to 35%.   |
| 04 | Set volume to 50%.   |
| 05 | Set volume to 65%.   |
| 06 | Set volume to 80%.   |
| 07 | Ageing condition (picture max., brightness max.).  |
| 08 | Shipping condition (Analog values are RESET to factory setting, Prog 1 is selected, TT--mode switched off, Vol = 35%).   |
| 09 | Dummy.   |
| 10 | No function.   |
| 11 | Dummy  |
| 12 | Text Picture Level Offset (Enable/Disable)   |
| 13 | Select Odd / Even field for Non-interlaced teletext.   |
| 14 | Select Interlaced / Non-interlaced teletext display.   |
| 15 | Read factory setting from ROM to NVM - Reads Volume, Brightness, Picture, Hue, Sharpness and Colour values from ROM to the actual used values (Last Power Memory). |
| 16 | No function  |
| 17 | Enable / Disable Sharpness Operation.  |
| 18 | Enable / Disable Teletext Operation.   |
| 19 | Enable / Disable NTSC Operation.   |
| 20 | No function.   |
| 21 | Sub Picture.   |
| 22 | Sub Colour (Pal / Secam Different Stores)  |
| 23 | Sub Brightness.  |
| 24 | Destination System BG/L.   |

|       |                                  |
|-------|----------------------------------|
| 25    | Destination Systems BG/L.        |
| 26    | Destination Systems I.           |
| 27    | Destination System I/I'.         |
| 28    | Destination BG only.             |
| 29    | Dummy.                           |
| 30    | No function.                     |
| 31-32 | Dummy.                           |
| 33    | Auto AGC Adjust.                 |
| 34    | Auto PLL Adjust.                 |
| 35-37 | Dummy.                           |
| 38    | Enter G2 adjustment mode.        |
| 39    | Dummy.                           |
| 40    | No function.                     |
| 41    | Re-initialise NVM.               |
| 42    | Dummy.                           |
| 43    | Re-initialise Geometry settings. |
| 44-47 | Dummy                            |
| 48    | Set NVM testbyte to 44h in NVM.  |
| 49    | Erase NVM testbyte               |
| 50    | No function.                     |

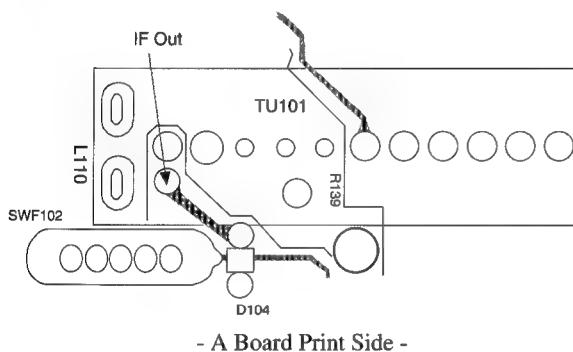
**Note :** For Test Modes 41 - 50, it is necessary to ensure that the TV is set to Prog 59.

**IF ADJUSTMENT (AUTOMATIC)**

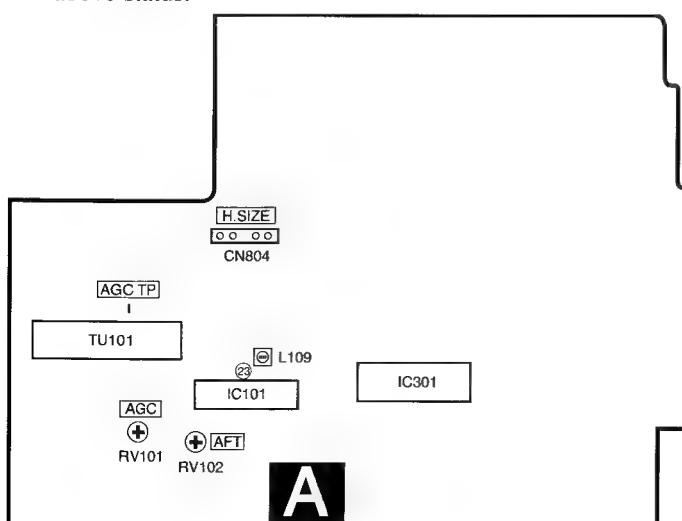
1. Input a 38.9 MHz 100dB $\mu$  CW signal at the IF Out injection point.
2. Enter into service mode and press 34.
3. Connect a digital voltmeter to IC101 pin (23).
4. Check AFT 2.5V  $\pm$ 0.3V dc.
5. Press '00' on the Remote Commander.

**SYSTEM L ADJUSTMENT ( French Models)**

1. Input a 33.9MHz 100dB $\mu$  CW signal at the IF Out injection point.
2. From the On Screen Menu set System to L band 1.
3. Connect a digital voltmeter to IC101 pin (23).
4. Adjust RV102 AFT for 2.5V  $\pm$ 0.3V dc.

**AGC ADJUSTMENT**

1. Receive an off-air signal.
2. Enter into the Service adjust menu and select AGC.
3. Adjust the data using the Red and Yellow buttons on the Remote Commander so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.

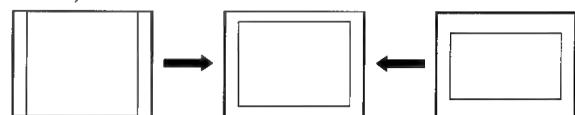
**DEFLECTION SYSTEM ADJUSTMENT**

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

See Note on page 23

| Adjustment  | Set  | Range   |
|-------------|------|---------|
| VERT, AMPL  | Adj. | 00 - 63 |
| VER, BREATH | 00   | 00 - 63 |
| PAR, AMPL   | 00   | 00 - 63 |
| PAR, TILT   | 32   | 00 - 63 |
| V, LINEAR   | Adj. | 00 - 63 |
| CORN, CORR  | Adj. | 00 - 63 |
| V, CENTRE   | Adj. | 00 - 63 |
| V, POSITION | 42   | 00 - 63 |
| H, CENTRE   | Adj. | 00 - 63 |

## VERT, AMPL



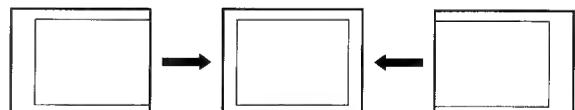
## V, LINEAR



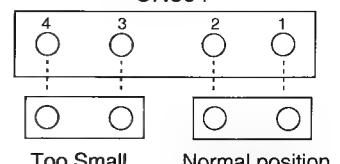
## V, CENTRE



## H, CENTRE



## H, SIZE



Fit the link as required to obtain the correct horizontal picture size. Remove the link if the H, SIZE is to large.

### 4-3. BE-4 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-4 chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I<sup>2</sup>C. In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1), on fatal errors are reported with this method.

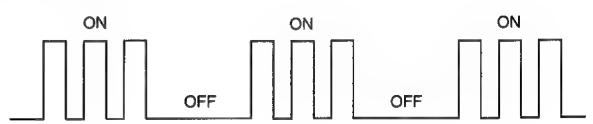
If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

**Table 1**

| No of Flashes | Meaning  |
|---------------|--|
| 2             | IC301 not acknowledging I <sup>2</sup> C transmission, NVM OK.                             |
| 3             | IC301 FAULT (Not OK) - flags   |
| 4             | IC301 - No H Flyback   |
| 5             | IC301 - Stack Overflow.  |
| 6             | Overvoltage / Overcurrent Protection (Pin 52) high.  |
| 7             | IC002 not acknowledging I <sup>2</sup> C transmission, IC301 OK.                           |
| 8             | IC002 and IC301 - No I <sup>2</sup> C acknowledgment.                                      |
| 9             | General I <sup>2</sup> C Error (SDA or SCL being held low)<br>(IC301, IC001, IC002, CN001) |

Flash Timing Example : e.g. error number 3

Stby LED

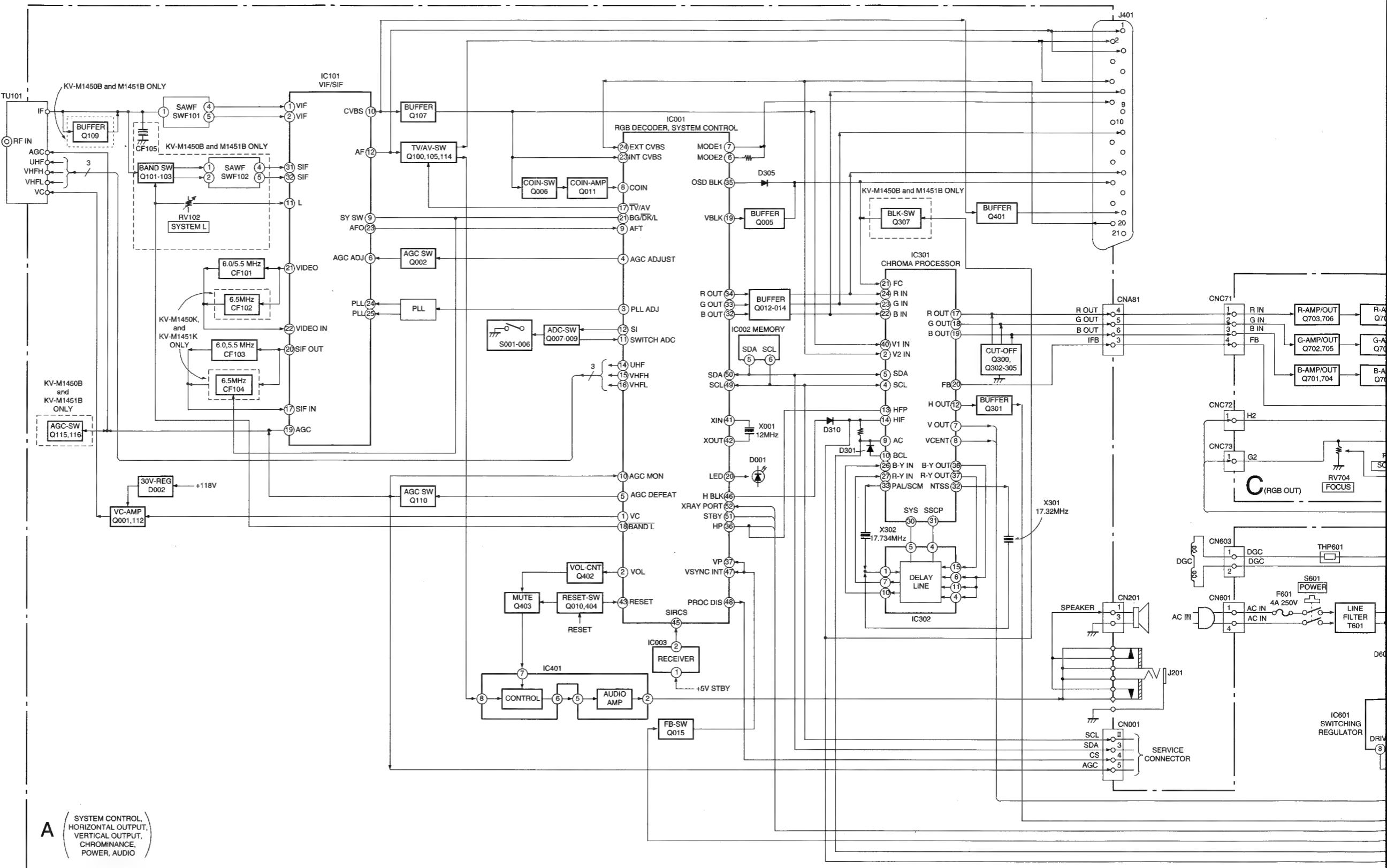


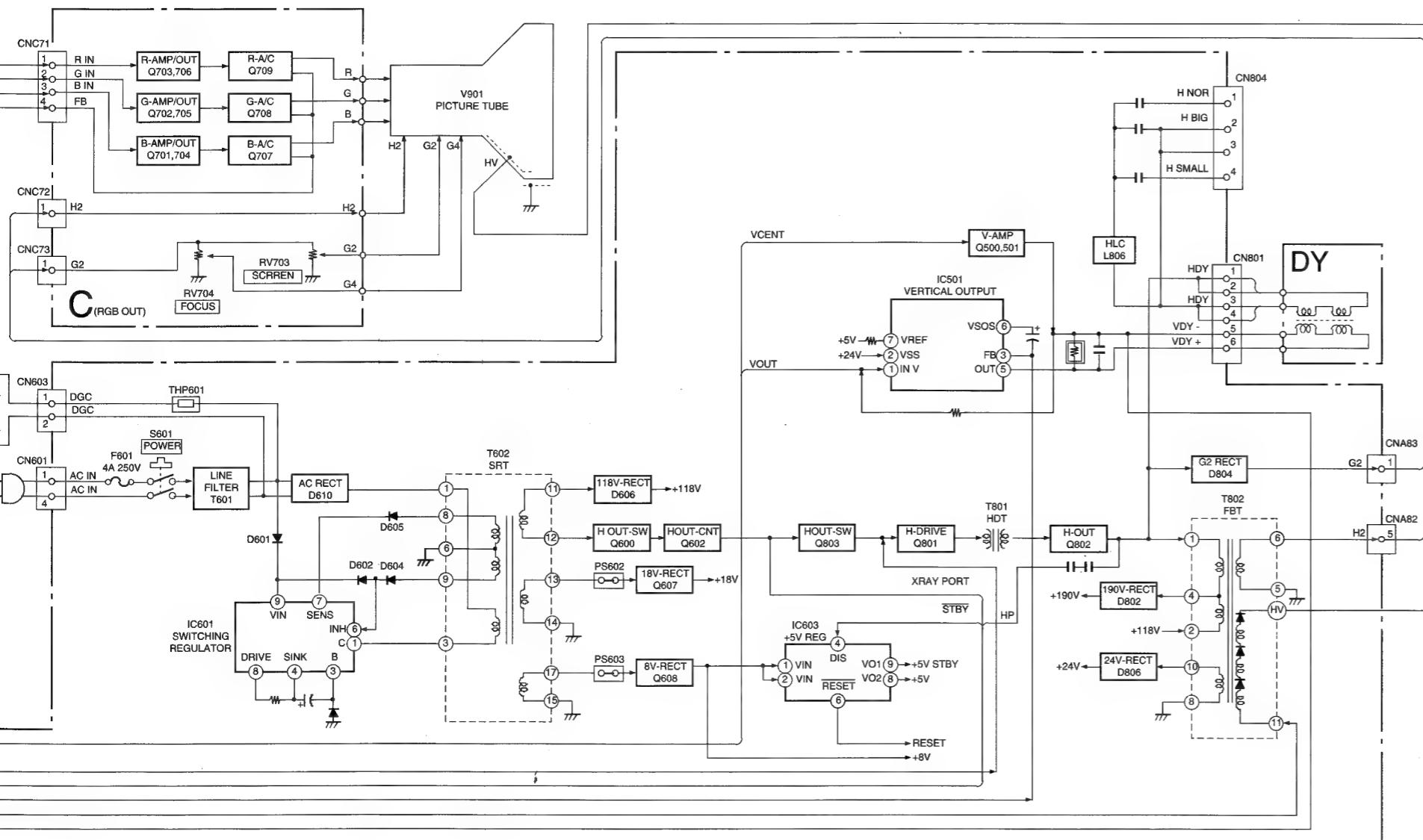
**Note :** Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

**MEMO**

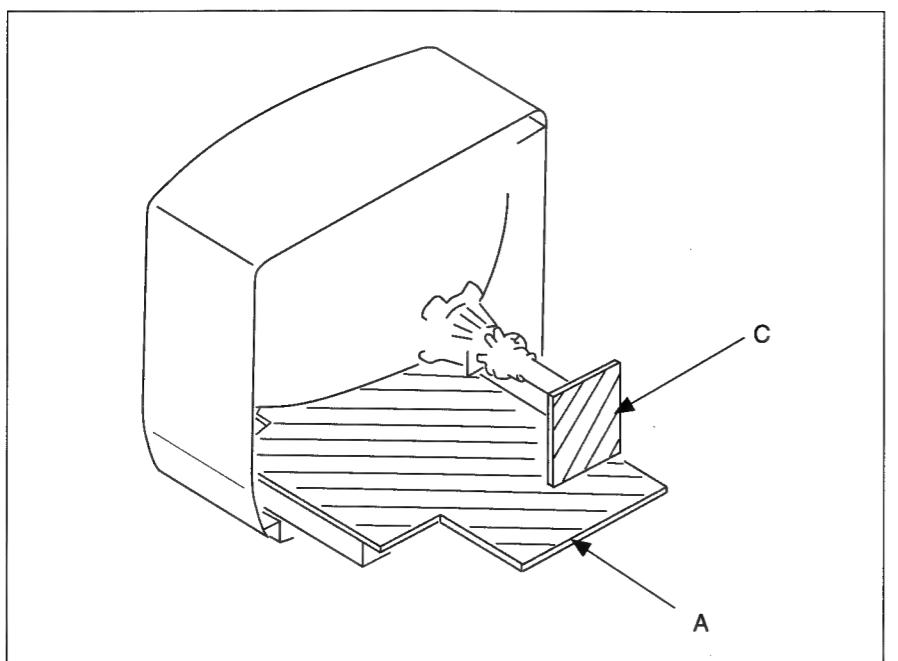
## SECTION 5 DIAGRAMS

### 5-1. BLOCK DIAGRAM





## **5-2. CIRCUIT BOARDS LOCATION**



## **5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS**

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.  
 $k = 1000$  ,  $M = 1000\text{K}$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm  
Rating electrical power  $\frac{1}{4}$  W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth - ground.
- : earth - chassis.
- : no mounted.

**Note :** The components identified by shading and marked  are critical for safety. Replace only with the part number specified.

**Note :** Les composants identifiés par une trame et une marque  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

**—A BOARD —**

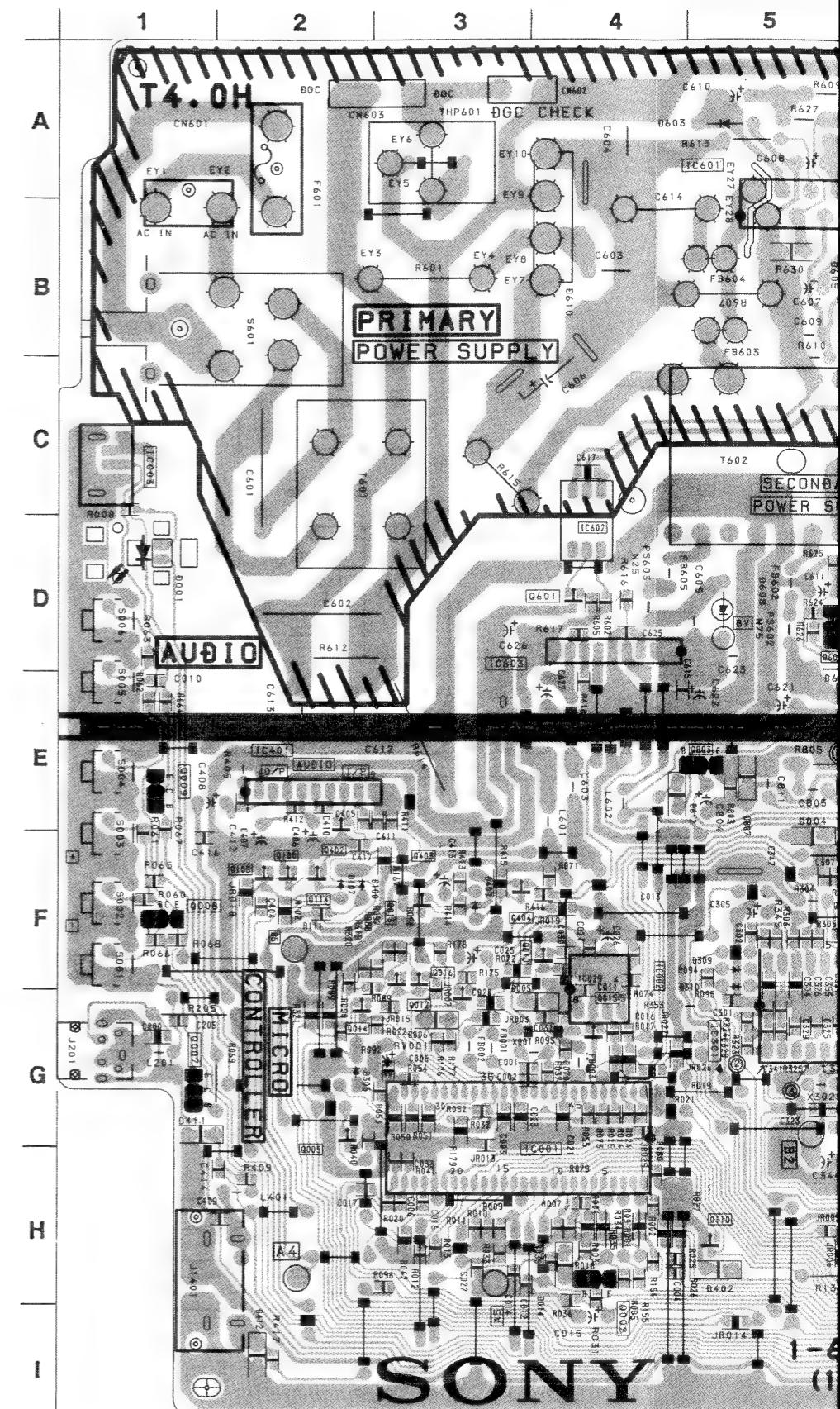
| IC                |      |                   |      |
|-------------------|------|-------------------|------|
| IC001             | H-4  | Q301              | F-6  |
| IC002             | G-4  | Q302              | G-7  |
| IC003             | C-1  | Q303              | G-7  |
| IC101             | G-10 | Q304              | F-7  |
| IC301             | G-5  | Q305              | G-7  |
| IC302             | H-7  | Q306              | G-8  |
| IC401             | E-2  | ○ Q307            | F-12 |
| IC501             | D-11 | Q401              | H-10 |
| IC601             | A-5  | Q402              | F-2  |
| IC603             | E-3  | Q403              | F-3  |
| TRANSISTOR        |      | Q404              | F-4  |
| Q001              | H-8  | Q500              | D-12 |
| Q002              | I-4  | Q501              | E-12 |
| Q005              | H-2  | Q600              | D-6  |
| Q006              | H-9  | Q602              | D-5  |
| Q007              | G-1  | Q801              | E-6  |
| Q008              | F-1  | Q802              | D-8  |
| Q009              | E-1  | Q803              | E-5  |
| DIODE             |      | DIODE             |      |
| Q010              | F-4  | D001              | D-1  |
| Q011              | H-8  | D002              | F-8  |
| Q012              | G-3  | D004              | F-5  |
| Q013              | F-3  | D005              | G-4  |
| Q014              | G-2  | D014              | I-4  |
| Q015              | G-4  | D100              | F-3  |
| Q100              | F-2  | ○ D102            | G-11 |
| ○ Q101            | G-11 | ○ D104            | G-11 |
| ○ Q102            | G-11 | ● D105            | F-8  |
| ○ Q103            | G-11 | ● D106            | F-8  |
| Q105              | F-2  | D107              | F-2  |
| Q107              | H-9  | D109              | F-9  |
| ○ Q109            | G-10 | D301              | F-6  |
| ● Q111            | G-8  | D302              | F-7  |
| Q112              | F-12 | D305              | G-2  |
| ● Q113            | G-9  | ○ D307            | G-11 |
| Q114              | F-2  | ○ D308            | E-12 |
| ○ Q115            | F-10 | D310              | G-5  |
| ○ Q116            | F-9  | D401              | H-12 |
| Q300              | F-7  | D402              | H-5  |
| VARIABLE RESISTOR |      | VARIABLE RESISTOR |      |
|                   |      | RV102 H-10        |      |

Mark : M1450B and M1451B only

● Mark : M1450K and M1451K only

**A** SYSTEM CONTROL, HORIZONTAL OUTPUT,  
VERTICAL OUTPUT, CHROMINANCE,  
POWER, AUDIO

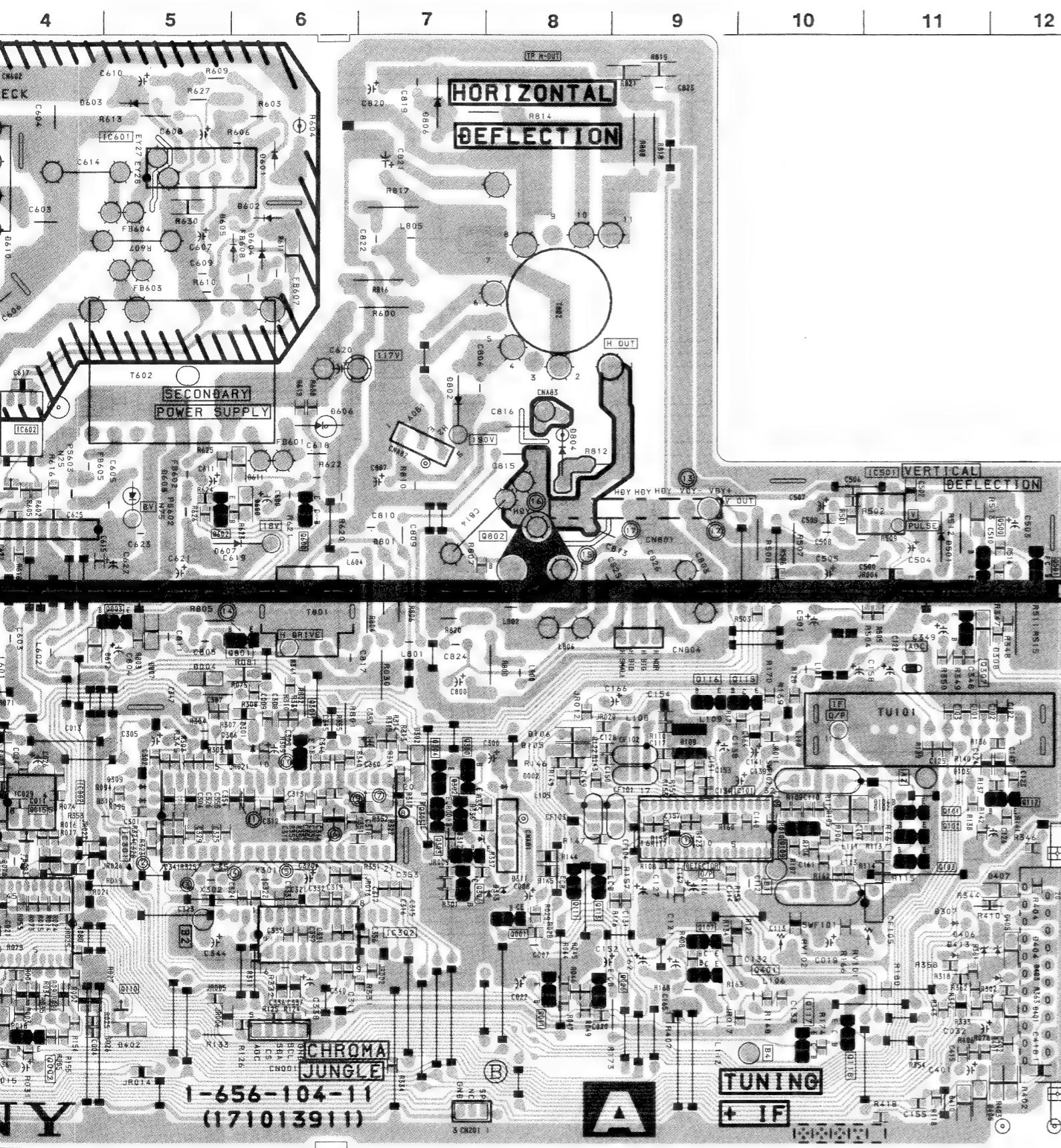
## **— A BOARD —**



## NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

## A BOARD \* MARK



A

B

C

D

E

F

G

H

I

J

K

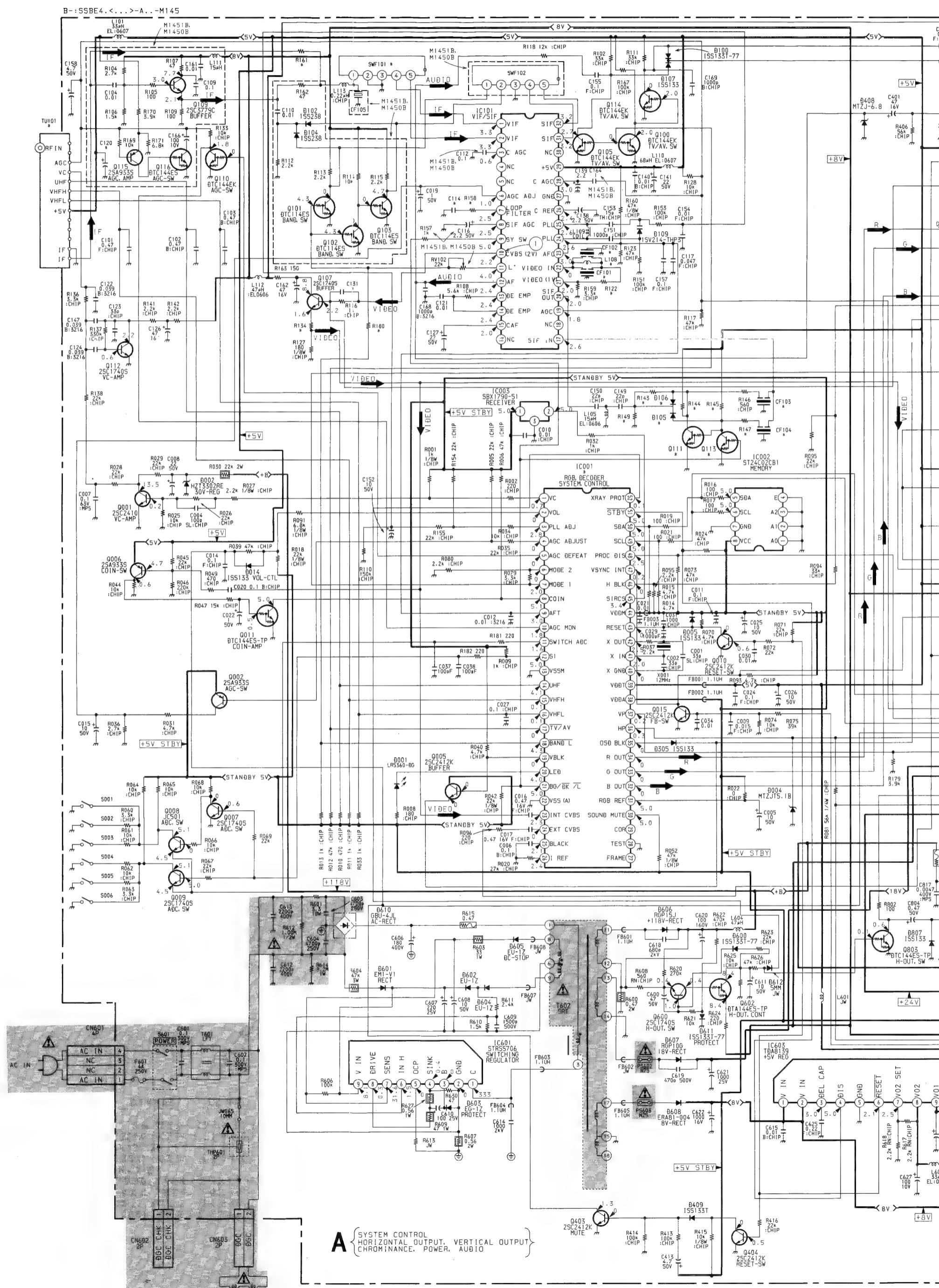
L

M

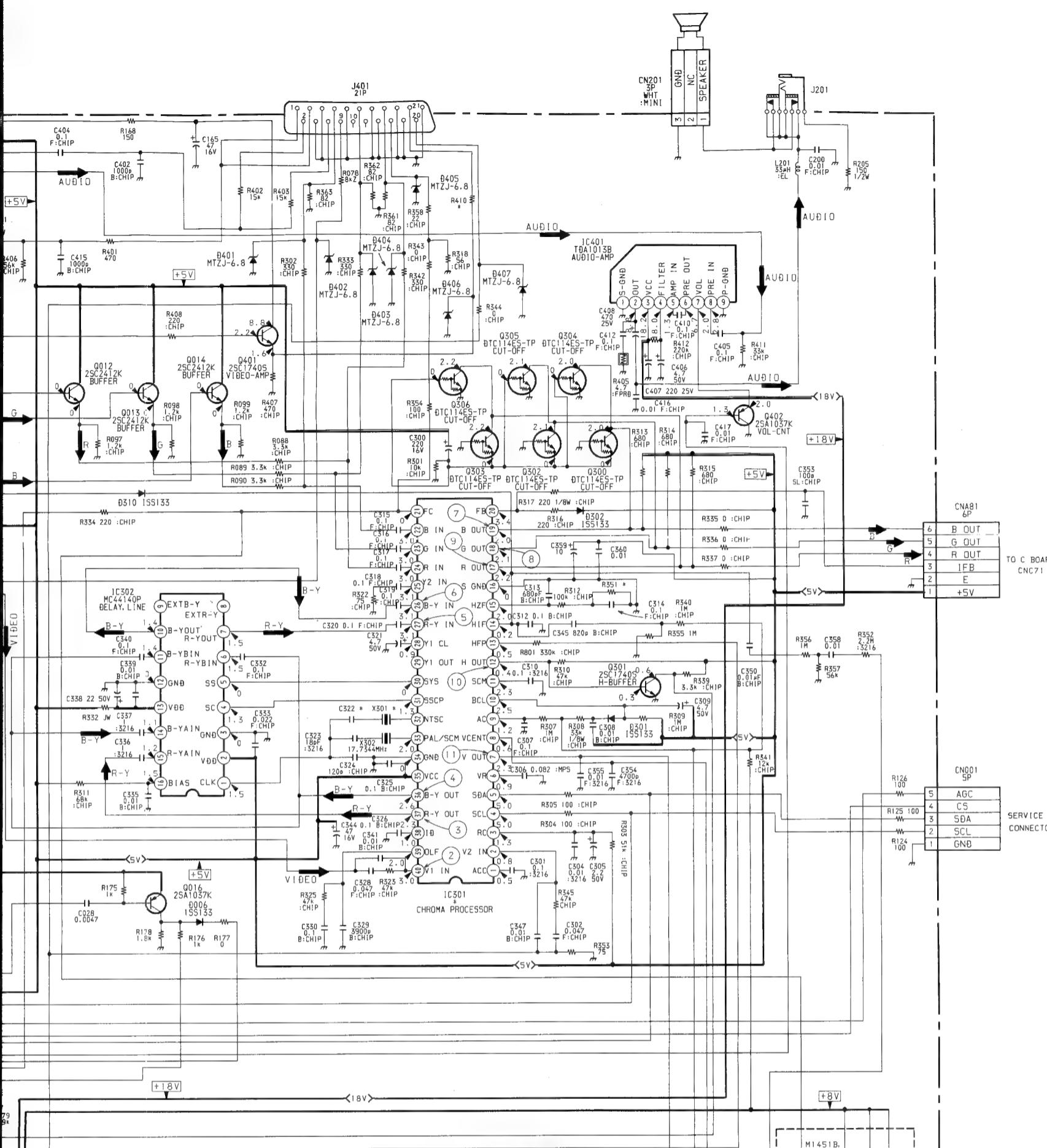
N

O

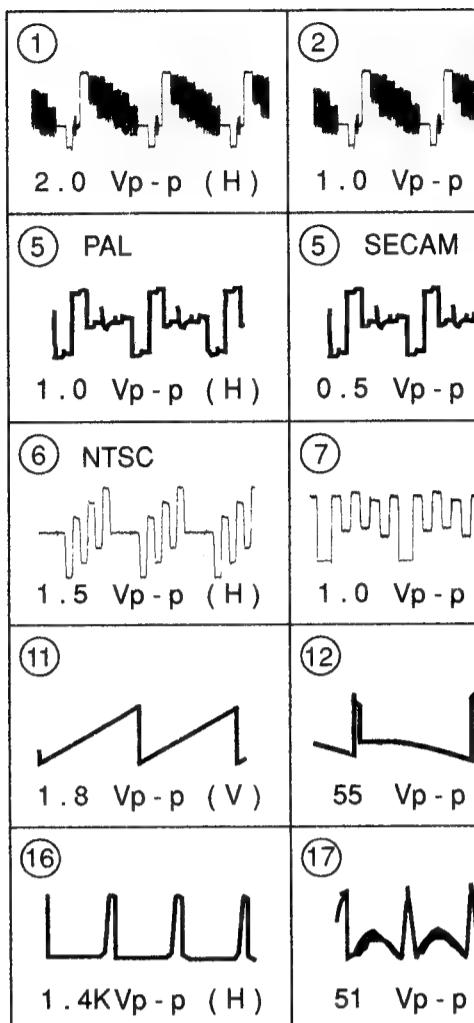
P



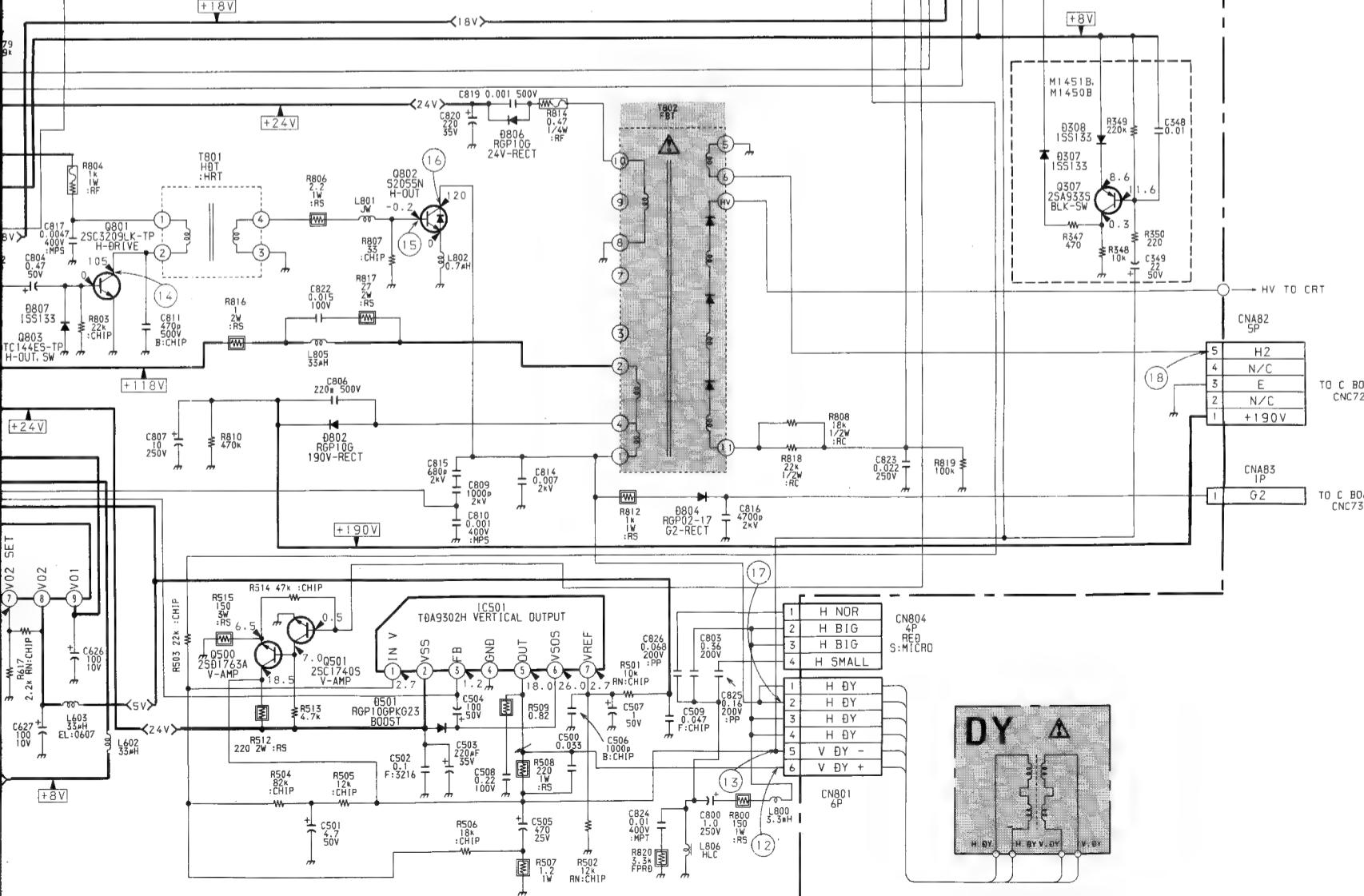
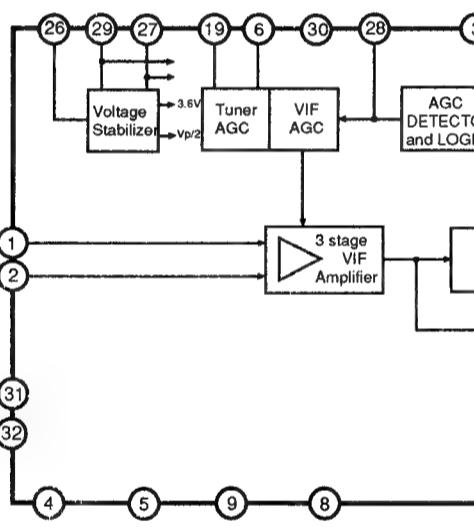
1 12 13 14 15 16 17 18 19



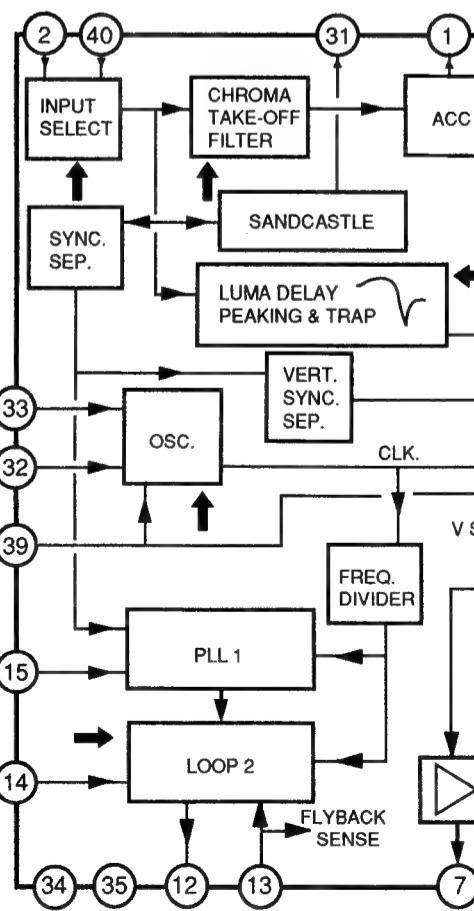
### WAVEFORMS A BOARD



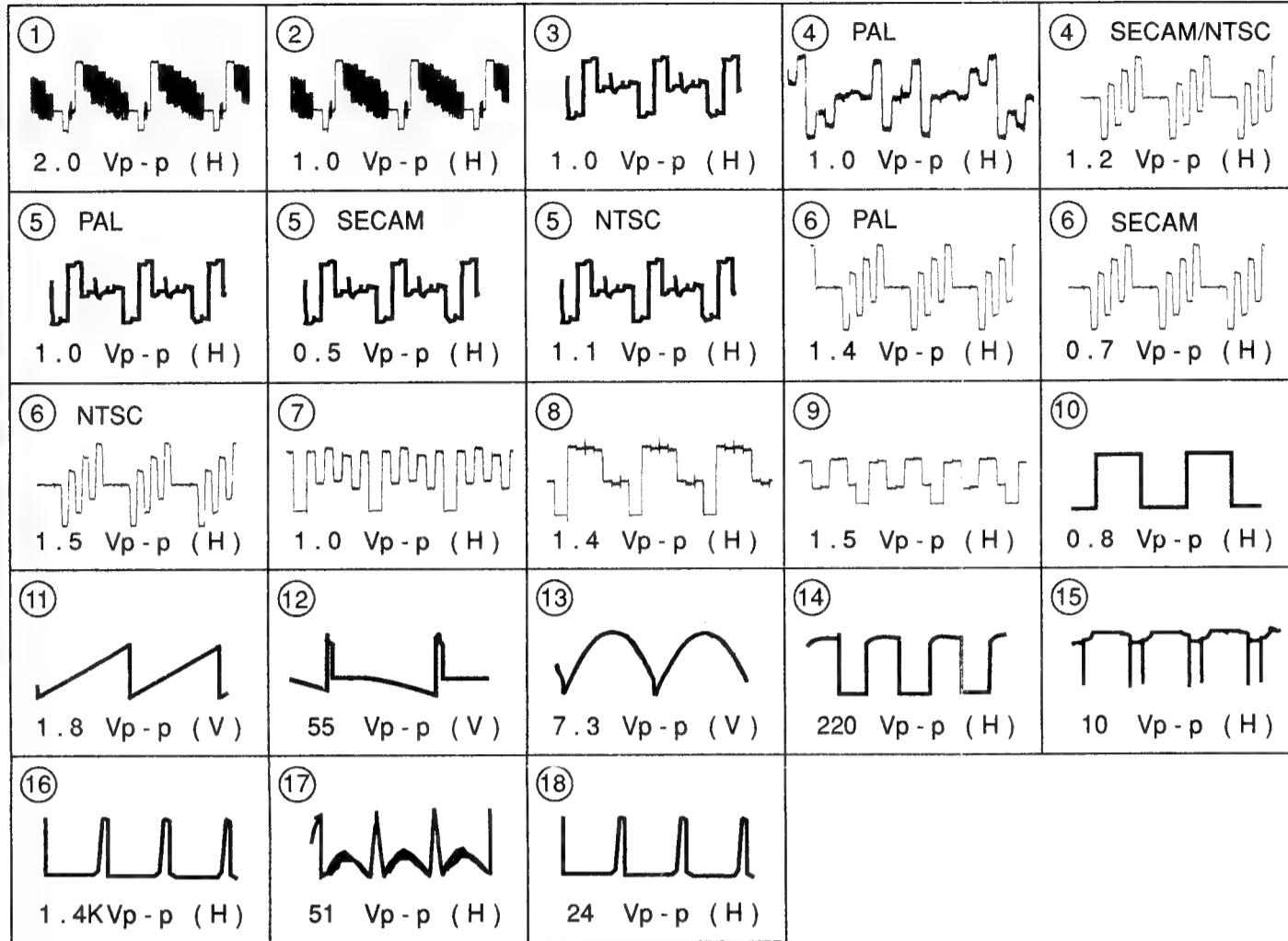
### A BOARD IC101 TDA9806/TDA9812



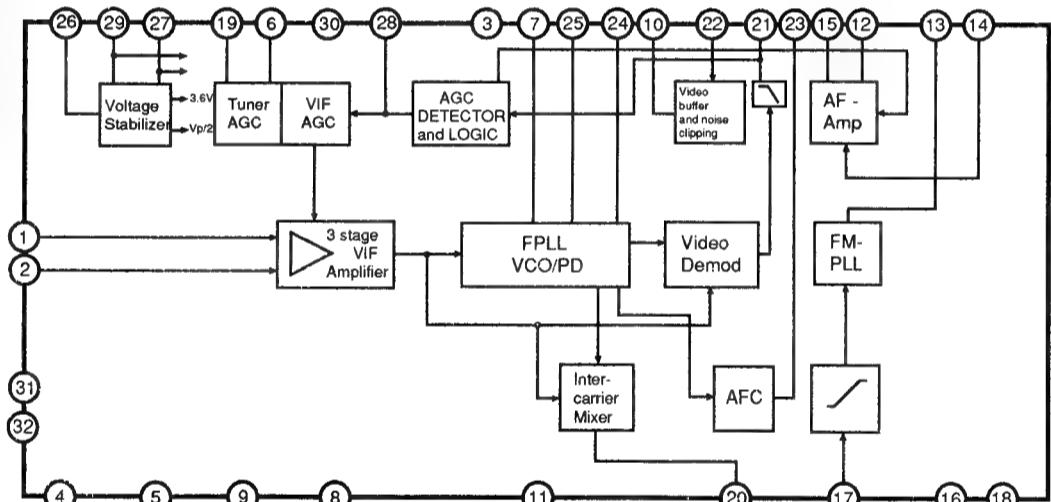
### A BOARD IC301 MC4402P/MC44007



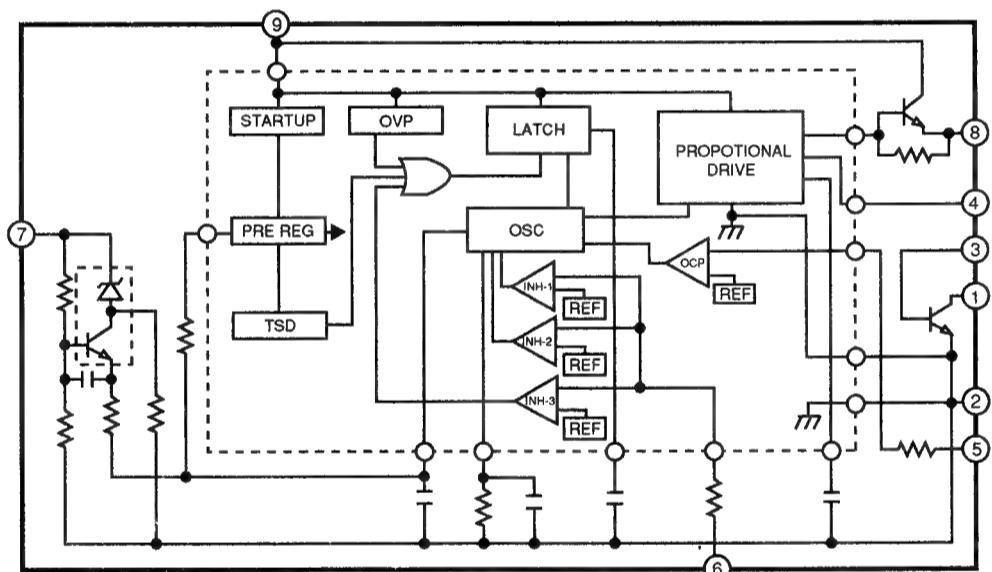
## WAVEFORMS A BOARD



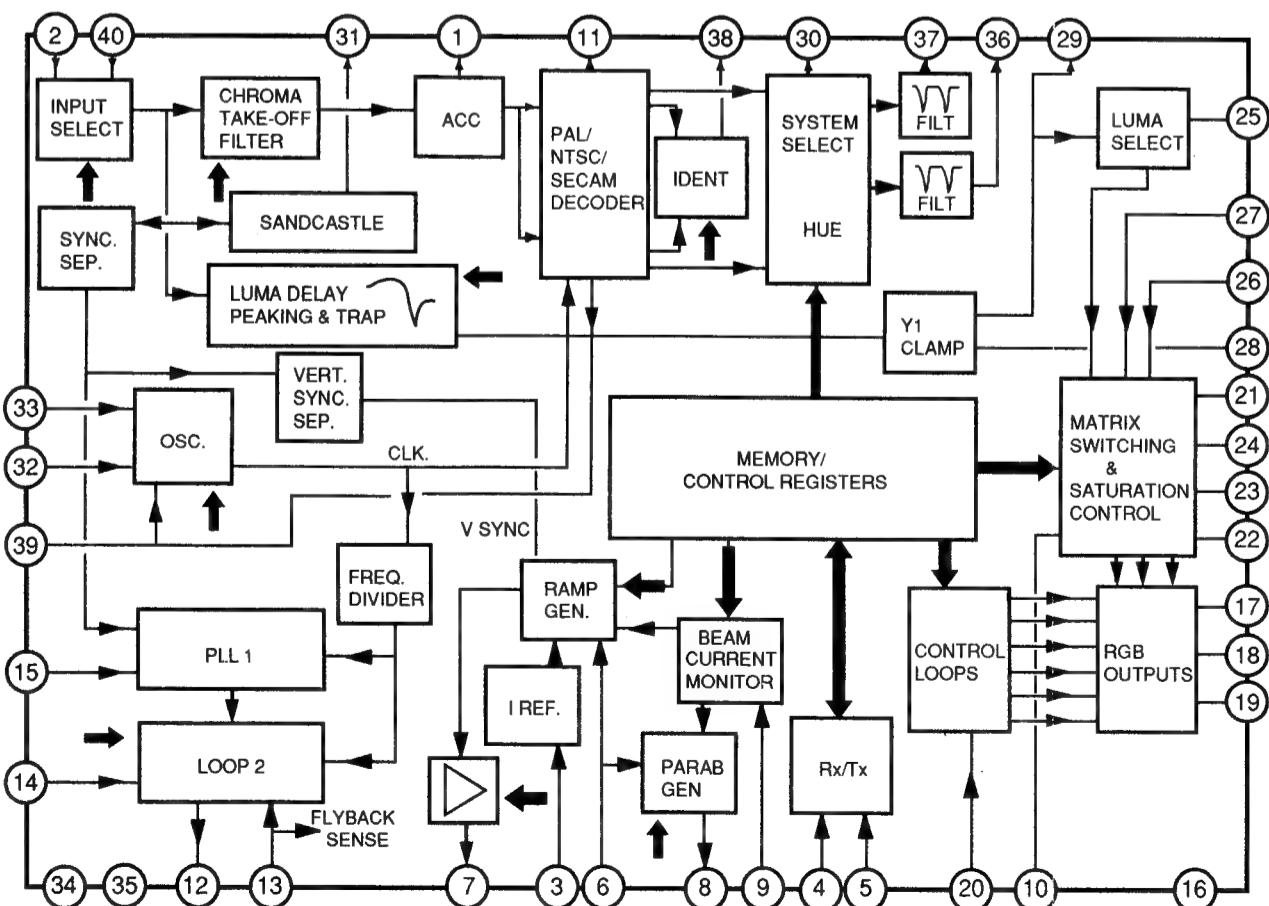
A BOARD IC101 TDA9806/TDA9812



A BOARD IC601 STRS5706



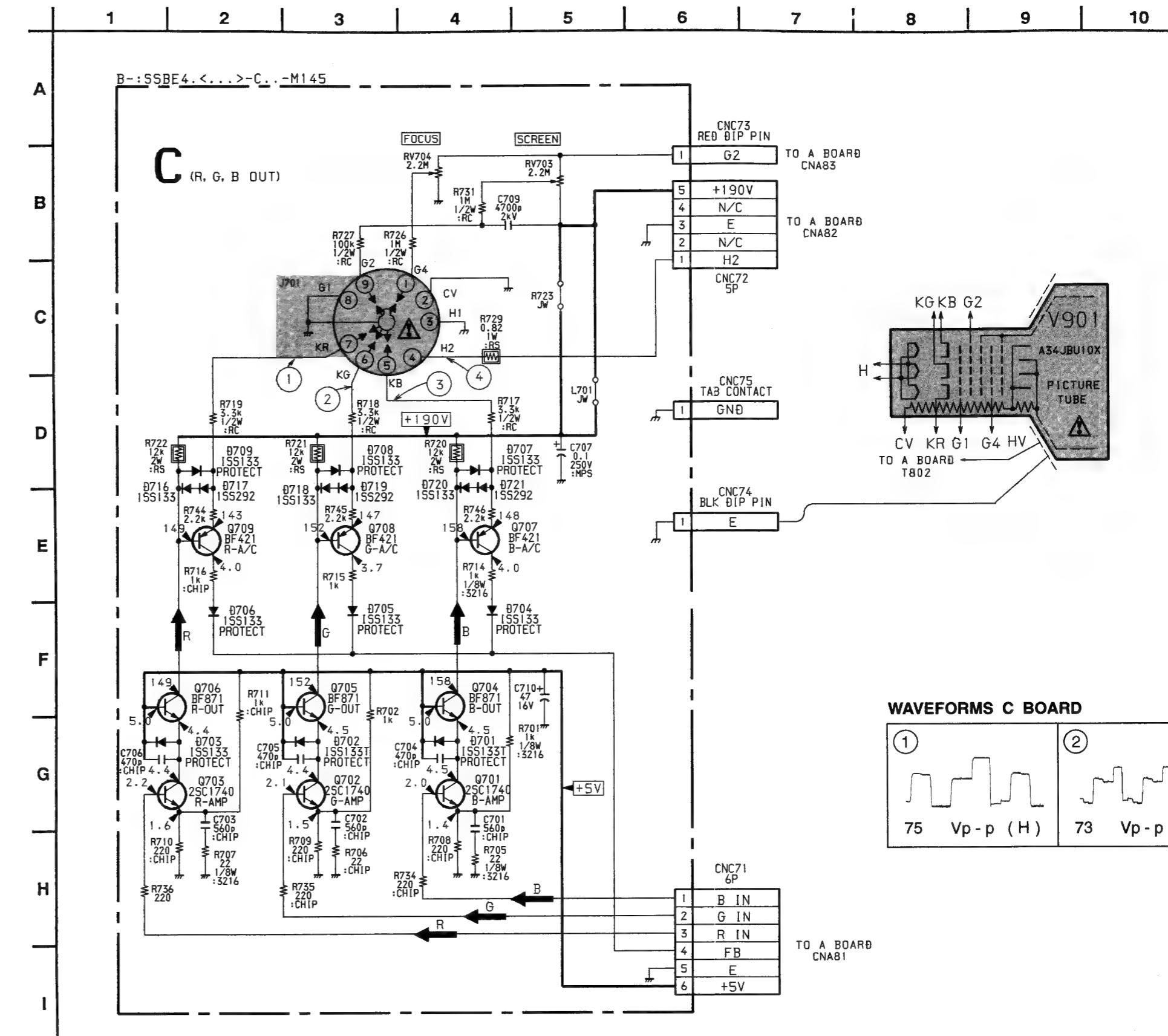
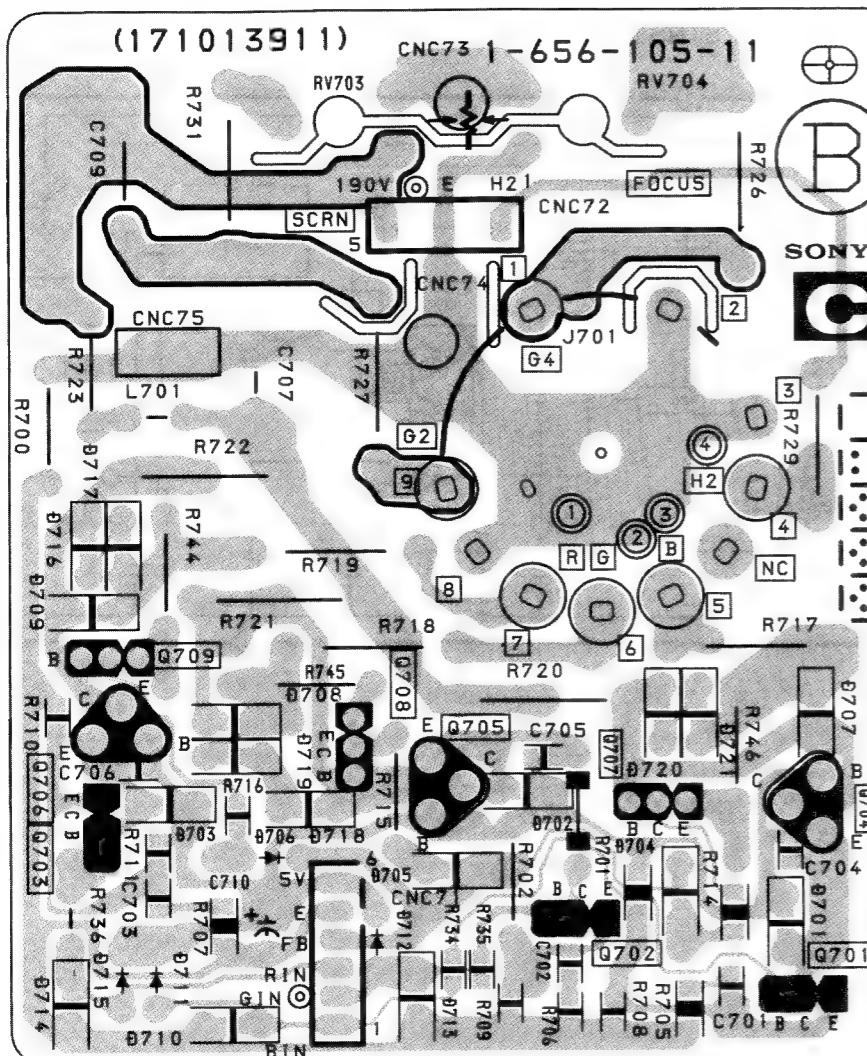
A BOARD IC301 MC4402P/MC44007P



C

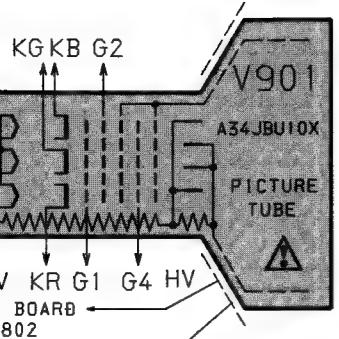
[ R.G.B OUT ]

— C BOARD —

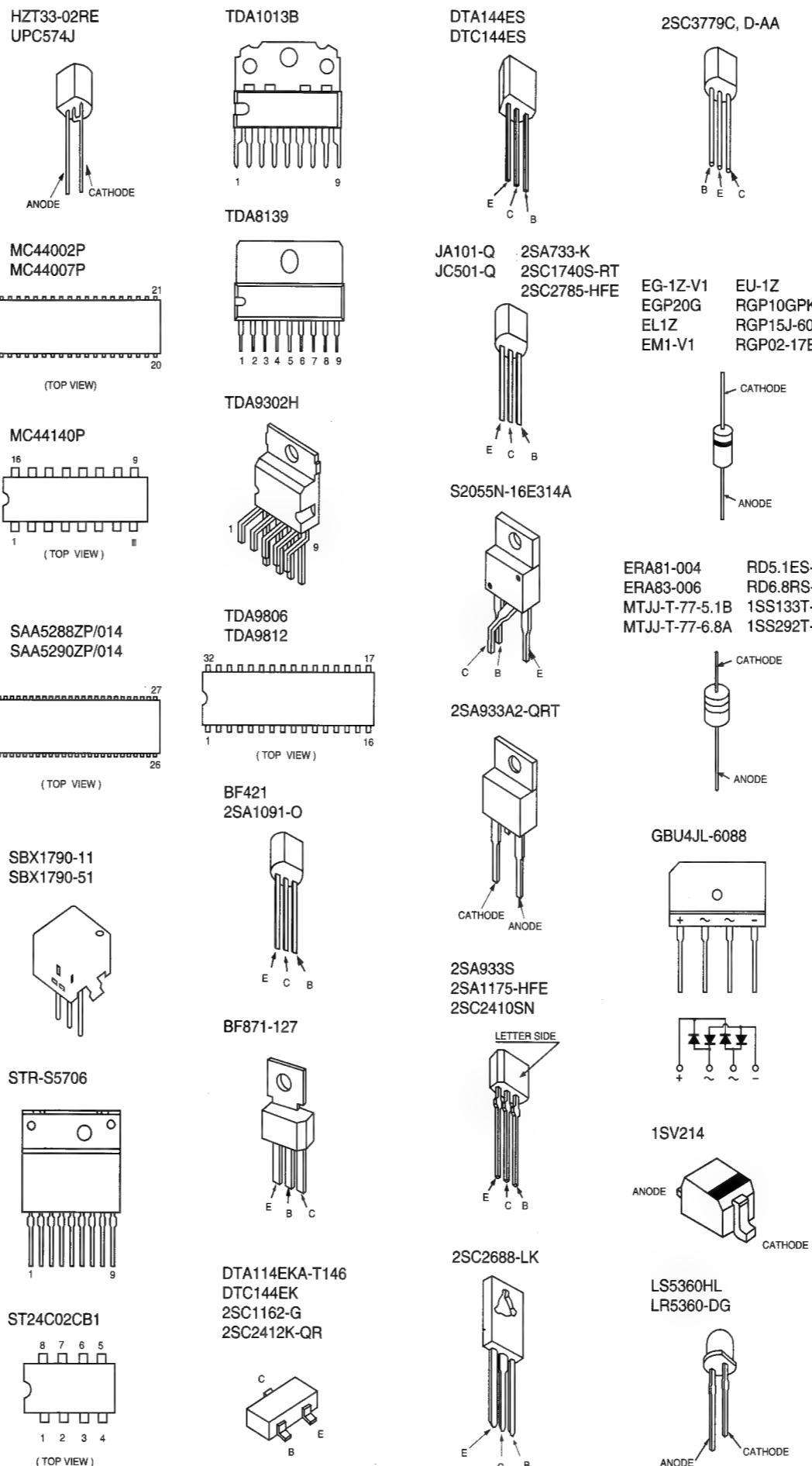
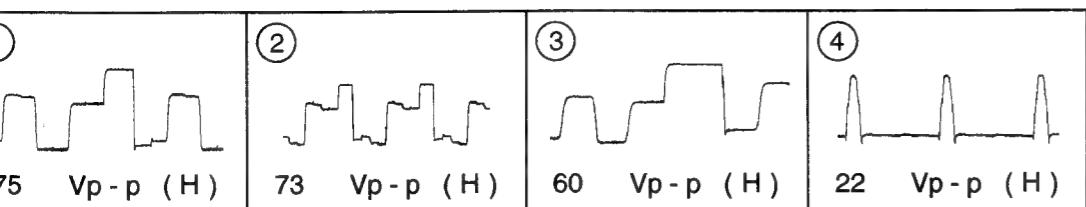


## 5-4. SEMICONDUCTORS

8 | 9 | 10



### WAVEFORMS C BOARD

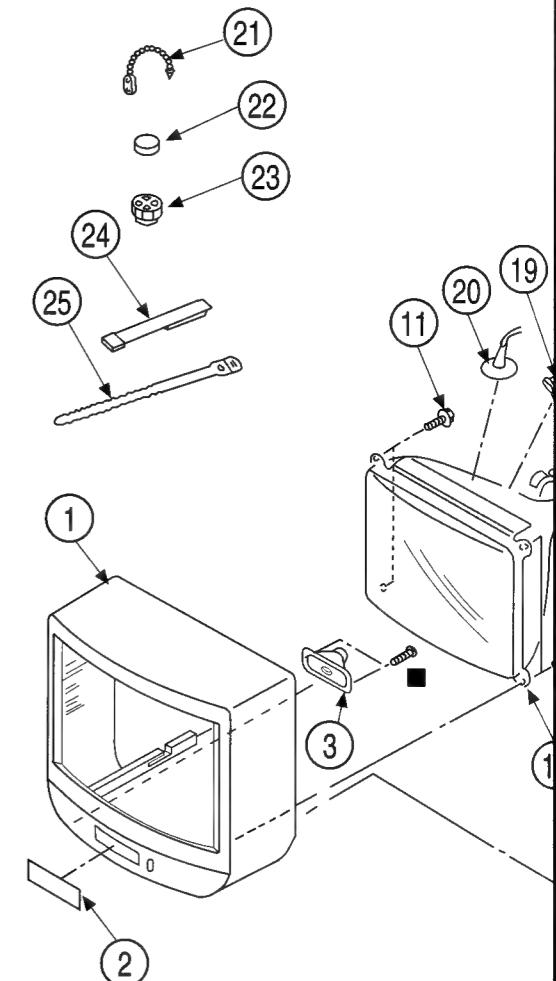


**NOTE :**

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a callout number in the remarks column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

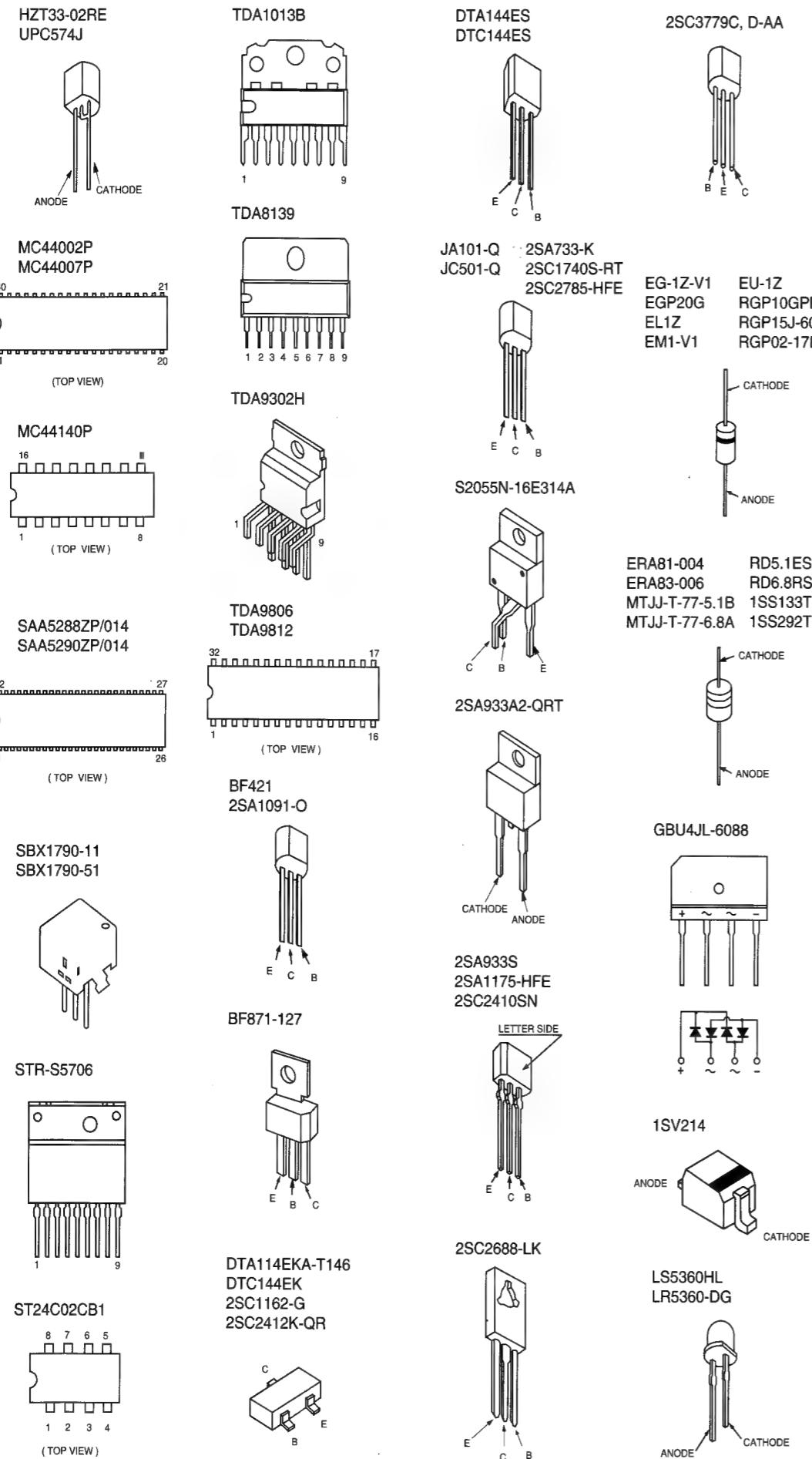
## 6-1. CHASSIS AND PICTURE TUBE

■ : +BVTP SCREW 4x16 7-685-663-79



| REF NO | PART NO      | DESCRIPTION  | REMA |
|--------|--------------|--|------|
| 1      | 4-203-015-51 | BEZNET ASSY  |      |
| 2      | 4-203-014-31 | WINDOW, ORNAMENTAL<br>(KV-M1450A/M1450B/M1450D/M14 |      |
|        | 4-203-014-21 | WINDOW, ORNAMENTAL<br>(KV-M1451A/M1451B/M1451D/M14 |      |
|        | 4-203-014-11 | WINDOW, ORNAMENTAL (KV-M1450K/M14                  |      |
|        | 4-203-014-01 | WINDOW, ORNAMENTAL (KV-M1451K/M14                  |      |
| 3      | 1-504-899-11 | SPEAKER (9x5CM)                                    |      |
| 4      | 4-203-020-21 | BUTTON, POWER                                      |      |

## 5-4. SEMICONDUCTORS



## SECTION 6

### EXPLODED VIEWS

#### NOTE :

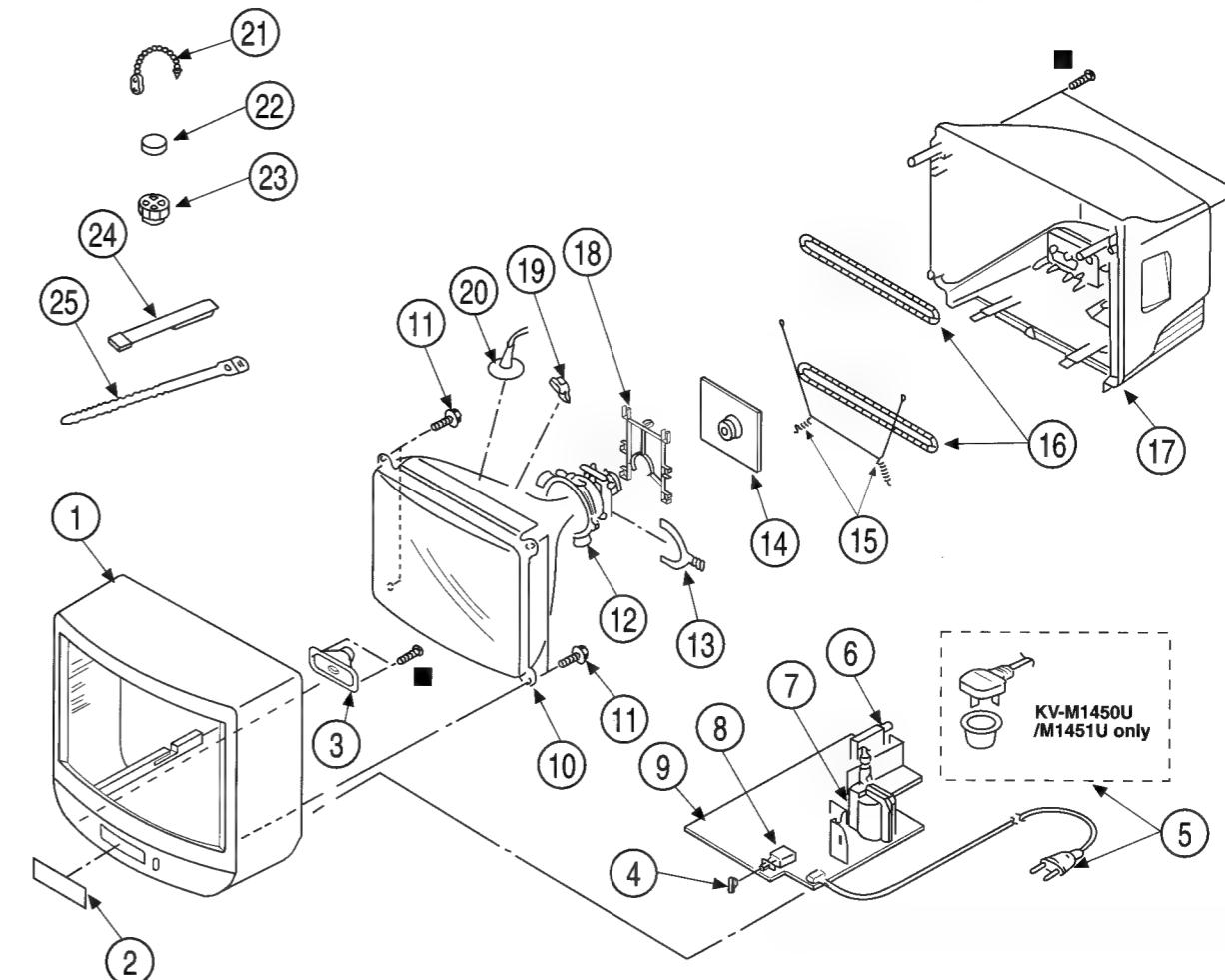
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

#### 6-1. CHASSIS AND PICTURE TUBE

: +BVTP SCREW 4x16 7-685-663-79



| REF NO | PART NO      | DESCRIPTION  | REMARK | REF NO    | PART NO            | DESCRIPTION  | REMARK |
|--------|--------------|--|--------|-----------|--------------------|--|--------|
| 1      | 4-203-015-51 | BEZNET ASSY  |        | 5         | 1-690-270-11       | CORD, POWER (WITH CONNECTOR)                       |        |
| 2      | 4-203-014-31 | WINDOW, ORNAMENTAL<br>(KV-M1450A/M1450B/M1450D/M1450E) |        | 2         | 2.5A/250V          | (KV-M1450A/M1451A/M1450B<br>/M1451B/M1450E/M1451E) |        |
|        | 4-203-014-21 | WINDOW, ORNAMENTAL<br>(KV-M1451A/M1451B/M1451D/M1451E) |        | 4         | 1-690-270-21       | CORD, POWER (WITH CONNECTOR)                       |        |
|        | 4-203-014-11 | WINDOW, ORNAMENTAL (KV-M1450K/M1450U)                  |        | 2.5A/250V | (KV-M1450K/M1451K) |  |        |
|        | 4-203-014-01 | WINDOW, ORNAMENTAL (KV-M1451K/M1451U)                  |        | 3         | 1-590-460-11       | CORD, POWER (WITH CONNECTOR)                       |        |
| 3      | 1-504-899-11 | SPEAKER (9x5CM)  |        | 7.0A/250V | (KV-M1450D/M1451D) |  |        |
| 4      | 4-203-020-21 | BUTTON, POWER  |        | 4         | 1-590-762-11       | CORD, POWER (WITH PLUG)                            |        |
|        |              |  |        |           | 2.5A/250V          | (KV-M1450U/M1451U)                                 |        |

The components identified by shading and marked **A** are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

| REF NO | PART NO  | DESCRIPTION  | REMARK | REF NO | PART NO | DESCRIPTION | REMARK |
|--------|--|--|--------|--------|---------|-------------|--------|
| 6      | 1-693-303-11<br>1-693-310-11<br>8-598-331-00   | TUNER (TELELX001A) (KV-M1450A/M1451A)<br>TUNER (TELELX002A) (KV-M1450B/M1451B)<br>TUNER (BT-AC401)<br>(KV-M1450D/M1451D/M1450E/M1451E)   |        |        |         |             |        |
|        | 1-693-302-11<br>1-693-301-11<br>8-598-333-00   | TUNER (U1315) (KV-M1450K/M1451K)<br>TUNER (U1343) (KV-M1450U)<br>TUNER (BT-AU601) (KV-M1451U)  |        |        |         |             |        |
|        | 1-453-186-11   | TRANSFORMER ASSY, FLYBACK<br>(NX-1730/U2AA)  |        |        |         |             |        |
|        | 1-571-433-11   | SWITCH, PUSH (AC POWER)  |        |        |         |             |        |
| 9      | *A-1666-014-A<br>*A-1666-013-A<br>*A-1666-017-A<br>*A-1666-018-A<br>*A-1666-027-A<br>*A-1666-026-A<br>*A-1666-016-A<br>*A-1666-015-A<br>*A-1666-009-A<br>*A-1666-008-A<br>*A-1666-006-A<br>*A-1666-011-A | A AND C BOARD, COMPLETE (KV-M1450A)<br>A AND C BOARD, COMPLETE (KV-M1451A)<br>A AND C BOARD, COMPLETE (KV-M1450B)<br>A AND C BOARD, COMPLETE (KV-M1451B)<br>A AND C BOARD, COMPLETE (KV-M1450D)<br>A AND C BOARD, COMPLETE (KV-M1451D)<br>A AND C BOARD, COMPLETE (KV-M1450E)<br>A AND C BOARD, COMPLETE (KV-M1451E)<br>A AND C BOARD, COMPLETE (KV-M1450K)<br>A AND C BOARD, COMPLETE (KV-M1451K)<br>A AND C BOARD, COMPLETE (KV-M1450U)<br>A AND C BOARD, COMPLETE (KV-M1451U) |        |        |         |             |        |
|        | 3-735-561-05   | FLICKER TUBE (SD-1251A31VB010)   |        |        |         |             |        |
| 11     | 4-036-190-01   | SCREW (5), TAPPING   |        |        |         |             |        |
|        | 3-451-249-81   | DEFLECTION Yoke (Y1/H02)   |        |        |         |             |        |
| 13     | 1-452-277-13   | MAGNET, BMC  |        |        |         |             |        |
| 14     | *A-1638-064-A  | C BOARD, COMPLETE<br>(KV-M1450A/M1451A/M1450B/M1451B/<br>M1450E/M1451E)  |        |        |         |             |        |
|        | *A-1638-063-A  | C BOARD, COMPLETE<br>(KV-M1450D/M1451D/M1450K/M1451K/<br>M1450U/M1451U)  |        |        |         |             |        |
| 15     | *4-043-738-01  | SPRING, GROUND   |        |        |         |             |        |
|        | 3-426-145-21   | COIL, DEGAUSSING   |        |        |         |             |        |
| 17     | 4-203-019-51   | COVER (SC), REAR   |        |        |         |             |        |
| 18     | *4-203-097-01  | HOLDER, HV<br>(KV-M1450A/M1451A/M1450B/M1451B/<br>M1450E/M1451E)   |        |        |         |             |        |
|        | *4-203-022-01  | HOLDER, HV<br>(KV-M1450D/M1451D/M1450K/M1451K/<br>M1450U/M1451U)   |        |        |         |             |        |
| 19     | 3-704-495-01   | SPACER, DV   |        |        |         |             |        |
|        | 1-540-007-11   | CAP ASSY, HIGH VOLTAGE   |        |        |         |             |        |
| 21     | 4-308-870-00   | CLIP, LEAD WIRE  |        |        |         |             |        |
| 22     | 1-452-032-00   | MAGNET, DISK; 10MM Ø   |        |        |         |             |        |
| 23     | 1-452-094-00   | MAGNET, ROTATABLE DISK; 15MM Ø   |        |        |         |             |        |
| 24     | X-4309-608-0   | PERMALLOY ASSY, CONVERGENCE  |        |        |         |             |        |
| 25     | 3-701-007-00   | BAND, BINDING  |        |        |         |             |        |

SECTION 7

## **ELECTRICAL PARTS LIST**

When indicating parts by reference number, please include the board name.

CAPACITORS COILS  
MF : mF, PF : mmF MMH : mH,  $\mu$ H : mH

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

The components identified by shading and marked  are critical for safety.  
Replace only with the part number specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite.  
Ne les remplacer que par une piece portant le numero specifie.

A and C

| REF.NO.       | PART NO.                            | DESCRIPTION          | REMARK | REF.NO. | PART NO.     | DESCRIPTION           | REMARK               |   |
|---------------|-------------------------------------|----------------------|--------|---------|--------------|-----------------------|----------------------|---|
| *A-1666-014-A | A AND C BOARD, COMPLETE (KV-M1450A) | *****                |        | C026    | 1-126-964-11 | ELECT 10MF            | 20% 50V              |   |
| *A-1666-013-A | A AND C BOARD, COMPLETE (KV-M1451A) | *****                |        | C027    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                  |   |
| *A-1666-017-A | A AND C BOARD, COMPLETE (KV-M1450B) | *****                |        | C028    | 1-163-055-00 | CERAMIC CHIP 0.0047MF | 10% 50V              |   |
| *A-1666-018-A | A AND C BOARD, COMPLETE (KV-M1451B) | *****                |        | C029    | 1-163-009-11 | CERAMIC CHIP 0.001MF  | 10% 50V              |   |
| *A-1666-027-A | A AND C BOARD, COMPLETE (KV-M1450D) | *****                |        | C030    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 100V             |   |
| *A-1666-026-A | A AND C BOARD, COMPLETE (KV-M1451D) | *****                |        | C031    | 1-163-009-11 | CERAMIC CHIP 1000PF   | 5% 25V               |   |
| *A-1666-016-A | A AND C BOARD, COMPLETE (KV-M1450E) | *****                |        | C034    | 1-136-153-00 | FILM 0.01MF           | 5% 50V               |   |
| *A-1666-015-A | A AND C BOARD, COMPLETE (KV-M1451E) | *****                |        | C037    | 1-163-117-00 | CERAMIC CHIP 100PF    | 5% 50V               |   |
| *A-1666-009-A | A AND C BOARD, COMPLETE (KV-M1450K) | *****                |        | C038    | 1-163-117-00 | CERAMIC CHIP 100PF    | 5% 50V               |   |
| *A-1666-008-A | A AND C BOARD, COMPLETE (KV-M1451K) | *****                |        | C101    | 1-164-005-11 | CERAMIC CHIP 0.47MF   | 16V                  |   |
| *A-1666-006-A | A AND C BOARD, COMPLETE (KV-M1450U) | *****                |        | C102    | 1-164-005-11 | CERAMIC CHIP 0.47MF   | 16V                  |   |
| *A-1666-011-A | A AND C BOARD, COMPLETE (KV-M1451U) | *****                |        | C103    | 1-164-005-11 | CERAMIC CHIP 0.47MF   | 16V                  |   |
| 4-382-854-11  | SCREW (M3X10), P, SW (+)            |                      |        | C104    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V              |   |
|               | < CAPACITOR >                       |                      |        |         |              |                       | (KV-M1450B/M1451B)   |   |
| C001          | 1-163-105-00                        | CERAMIC CHIP 33PF    | 5%     | 50V     | C109         | 1-163-038-00          | CERAMIC CHIP 0.1MF   | 25V   |
| C002          | 1-163-105-00                        | CERAMIC CHIP 33PF    | 5%     | 50V     | C110         | 1-164-232-11          | CERAMIC CHIP 0.01MF  | (KV-M1450B/M1451B) 10% 50V  |
| C004          | 1-163-117-00                        | CERAMIC CHIP 100PF   | 5%     | 50V     | C112         | 1-137-399-11          | FILM 0.1MF           | (KV-M1450B/M1451B) 5% 50V   |
| C005          | 1-126-964-11                        | ELECT 10MF           | 20%    | 50V     | C114         | 1-136-169-00          | FILM 0.22MF          | (KV-M1450A/M1451A/M1450D/M1451D/M1450E/ 5% 50V M1451E/M1450K/M1451K/M1450U/M1451U)  |
| C006          | 1-164-004-11                        | CERAMIC CHIP 0.1MF   | 10%    | 25V     |              | 1-136-165-00          | FILM 0.1MF           | (KV-M1450B/M1451B) 5% 50V   |
| C007          | 1-130-777-00                        | FILM 0.1MF           | 5%     | 63V     | C116         | 1-124-925-11          | ELECT 2.2MF          | (KV-M1450B/M1451B) 20% 50V  |
| C008          | 1-126-965-11                        | ELECT 22MF           | 20%    | 50V     | C117         | 1-163-035-00          | CERAMIC CHIP 0.047MF | 50V   |
| C009          | 1-163-023-00                        | CERAMIC CHIP 0.015MF | 10%    | 50V     | C120         | 1-126-925-11          | ELECT 470MF          | (KV-M1450A/M1451A) 20% 10V  |
| C010          | 1-164-232-11                        | CERAMIC CHIP 0.01MF  | 10%    | 50V     |              | 1-126-923-11          | ELECT 220MF          | (KV-M1450B/M1451B/M1450D/M1451D/M1450E/ 20% 10V M1451E/M1450K/M1451K/M1450U/M1451U) |
| C011          | 1-163-038-00                        | CERAMIC CHIP 0.1MF   |        | 25V     | C121         | 1-136-153-00          | FILM 0.01MF          | 5% 50V  |
| C012          | 1-163-031-91                        | CERAMIC CHIP 1000PF  |        | 50V     | C122         | 1-164-665-11          | CERAMIC CHIP 0.039MF | 10% 50V   |
| C014          | 1-163-038-00                        | CERAMIC CHIP 0.1MF   |        | 25V     | C123         | 1-163-105-00          | CERAMIC CHIP 33PF    | 5% 50V  |
| C015          | 1-126-964-11                        | ELECT 10MF           | 20%    | 50V     | C124         | 1-164-665-11          | CERAMIC CHIP 0.039MF | 10% 50V   |
| C016          | 1-164-005-11                        | CERAMIC CHIP 0.47MF  |        | 16V     | C126         | 1-126-967-11          | ELECT 47MF           | 20% 16V   |
| C017          | 1-164-005-11                        | CERAMIC CHIP 0.47MF  |        | 16V     | C127         | 1-126-965-11          | ELECT 22MF           | 20% 50V   |
| C019          | 1-124-903-11                        | ELECT 1MF            | 20%    | 50V     | C131         | 1-163-141-00          | CERAMIC CHIP 0.001MF | (KV-M1450K/M1451K) 5% 50V   |
| C020          | 1-164-004-11                        | CERAMIC CHIP 0.1MF   | 10%    | 25V     | C138         | 1-124-925-11          | ELECT 2.2MF          | 20% 50V   |
| C021          | 1-163-059-00                        | CERAMIC CHIP 0.01MF  |        | 50V     | C139         | 1-124-925-11          | ELECT 2.2MF          | 20% 50V   |
| C022          | 1-124-903-11                        | ELECT 1MF            | 20%    | 50V     | C140         | 1-164-232-11          | CERAMIC CHIP 0.01MF  | 10% 50V   |
| C024          | 1-163-038-00                        | CERAMIC CHIP 0.1MF   |        | 25V     | C141         | 1-126-965-11          | ELECT 22MF           | 20% 50V   |
| C025          | 1-126-964-11                        | ELECT 10MF           | 20%    | 50V     |              |                       |                      |   |

The components identified by shading and marked are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

**A and C**

| REF.NO. | PART NO.     | DESCRIPTION           | REMARK                        | REF.NO. | PART NO.     | DESCRIPTION           | REMARK                        |
|---------|--------------|-----------------------|-------------------------------|---------|--------------|-----------------------|-------------------------------|
| C147    | 1-164-665-11 | CERAMIC CHIP 0.039MF  | 10% 50V                       | C345    | 1-163-139-00 | CERAMIC CHIP 820PF    | 10% 50V                       |
| C149    | 1-163-101-00 | CERAMIC CHIP 22PF     | 5% 50V                        | C347    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       |
| C150    | 1-163-101-00 | CERAMIC CHIP 22PF     | 5% 50V                        | C348    | 1-163-031-11 | CERAMIC CHIP 0.01MF   | 50V<br>(KV-M1450B/M1451B)     |
| C151    | 1-163-009-11 | CERAMIC CHIP 0.001MF  | 10% 50V                       | C349    | 1-126-965-11 | ELECT 22MF            | 20% 50V<br>(KV-M1450B/M1451B) |
| C152    | 1-126-964-11 | ELECT 10MF            | 20% 50V                       | C350    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 100V                      |
| C153    | 1-163-097-00 | CERAMIC CHIP 15PF     | 5% 50V                        | C353    | 1-163-117-00 | CERAMIC CHIP 100PF    | 5% 50V                        |
| C154    | 1-163-031-11 | CERAMIC CHIP 0.01MF   | 50V                           | C354    | 1-163-055-00 | CERAMIC CHIP 0.0047MF | 10% 50V                       |
| C155    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C355    | 1-163-059-00 | CERAMIC CHIP 0.01MF   | 50V                           |
| C157    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C358    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       |
| C158    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       | C359    | 1-126-964-11 | ELECT 10MF            | 20% 50V                       |
| C161    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V<br>(KV-M1450B/M1451B) | C360    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       |
| C162    | 1-126-967-11 | ELECT 47MF            | 20% 16V                       | C401    | 1-126-967-11 | ELECT 47MF            | 20% 16V                       |
| C164    | 1-162-638-11 | CERAMIC CHIP 1MF      | 16V<br>(KV-M1450B/M1451B)     | C402    | 1-163-009-11 | CERAMIC CHIP 0.001MF  | 10% 50V                       |
| C165    | 1-126-967-11 | ELECT 47MF            | 20% 16V                       | C404    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           |
| C166    | 1-126-933-11 | ELECT 100MF           | 20% 10V<br>(KV-M1450B/M1451B) | C405    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           |
| C168    | 1-163-205-00 | CERAMIC CHIP 0.001MF  | 10% 50V                       | C406    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       |
| C169    | 1-102-074-00 | CERAMIC 0.001MF       | 10% 50V                       | C407    | 1-104-666-11 | ELECT 220MF           | 20% 25V                       |
| C200    | 1-163-059-00 | CERAMIC CHIP 0.01MF   | 50V                           | C408    | 1-126-941-11 | ELECT 470MF           | 20% 25V                       |
| C300    | 1-126-934-11 | ELECT 220MF           | 20% 16V                       | C410    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           |
| C301    | 1-163-077-00 | CERAMIC CHIP 0.1MF    | 10% 25V                       | C412    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           |
| C302    | 1-163-035-00 | CERAMIC CHIP 0.047MF  | 50V                           | C413    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       |
| C304    | 1-163-059-91 | CERAMIC CHIP 0.01MF   | 10% 50V                       | C415    | 1-163-009-11 | CERAMIC CHIP 0.001MF  | 10% 50V                       |
| C305    | 1-124-925-11 | ELECT 2.2MF           | 20% 50V                       | C416    | 1-163-031-11 | CERAMIC CHIP 0.01MF   | 50V                           |
| C306    | 1-136-164-00 | FILM 0.082MF          | 5% 50V                        | C417    | 1-163-031-11 | CERAMIC CHIP 0.01MF   | 50V                           |
| C307    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C500    | 1-130-489-00 | FILM 0.033MF          | 5% 50V                        |
| C308    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       | C501    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       |
| C309    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       | C502    | 1-163-077-00 | CERAMIC CHIP 0.1MF    | 50V                           |
| C310    | 1-163-077-00 | CERAMIC CHIP 0.1MF    | 10% 25V                       | C503    | 1-107-894-11 | ELECT 220MF           | 20% 35V                       |
| C312    | 1-164-004-11 | CERAMIC CHIP 0.1MF    | 10% 25V                       | C504    | 1-124-122-11 | ELECT 100MF           | 20% 50V                       |
| C313    | 1-163-007-91 | CERAMIC CHIP 680PF    | 10% 50V                       | C505    | 1-126-941-11 | ELECT 470MF           | 20% 25V                       |
| C314    | 1-163-077-00 | CERAMIC CHIP 0.1MF    | 50V                           | C506    | 1-163-009-11 | CERAMIC CHIP 0.001MF  | 10% 50V                       |
| C315    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C507    | 1-124-903-11 | ELECT 1MF             | 20% 50V                       |
| C316    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C508    | 1-106-228-00 | MYLAR 0.22MF          | 10% 100V                      |
| C317    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C509    | 1-163-035-00 | CERAMIC CHIP 0.047MF  | 50V                           |
| C318    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C600    | 1-126-967-11 | ELECT 47MF            | 20% 50V                       |
| C319    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C601    | 1-136-516-12 | FILM 0.1MF            | 20% 300V                      |
| C320    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C602    | 1-136-516-12 | FILM 0.1MF            | 20% 300V                      |
| C321    | 1-124-927-11 | ELECT 4.7MF           | 20% 50V                       | C603    | 1-161-964-91 | CERAMIC 0.0047MF      | 250V                          |
| C322    | 1-163-099-00 | CERAMIC CHIP 18PF     | 5% 50V<br>(KV-M1450K/M1451K)  | C604    | 1-161-964-91 | CERAMIC 0.0047MF      | 250V                          |
| C323    | 1-163-163-00 | CERAMIC CHIP 18PF     | 5% 50V                        | C606    | 1-113-473-11 | ELECT (BLOCK) 180MF   | 20% 400V                      |
| C324    | 1-163-119-00 | CERAMIC CHIP 120PF    | 5% 50V                        | C607    | 1-104-666-11 | ELECT 220MF           | 20% 25V                       |
| C325    | 1-164-004-11 | CERAMIC CHIP 0.1MF    | 10% 50V                       | C608    | 1-126-964-11 | ELECT 10MF            | 20% 50V                       |
| C326    | 1-164-004-11 | CERAMIC CHIP 0.1MF    | 10% 25V                       | C609    | 1-109-921-11 | CERAMIC 0.0015MF      | 10% 500V                      |
| C328    | 1-163-035-00 | CERAMIC CHIP 0.047MF  | 50V                           | C610    | 1-104-665-11 | ELECT 100MF           | 20% 25V                       |
| C329    | 1-163-016-00 | CERAMIC CHIP 0.0039MF | 10% 50V                       | C611    | 1-126-964-11 | ELECT 10MF            | 20% 50V                       |
| C330    | 1-164-004-11 | CERAMIC CHIP 0.1MF    | 10% 25V                       | C612    | 1-164-503-61 | CERAMIC 0.0022MF      | 20% 400V                      |
| C332    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C613    | 1-164-503-61 | CERAMIC 0.0022MF      | 20% 400V                      |
| C333    | 1-163-033-91 | CERAMIC CHIP 0.022MF  | 50V                           | C614    | 1-136-538-11 | FILM 0.001MF          | 3% 2KV                        |
| C335    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       | C615    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       |
| C336    | 1-162-638-11 | CERAMIC CHIP 1MF      | 16V                           | C618    | 1-162-116-00 | CERAMIC 680PF         | 10% 2KV                       |
| C337    | 1-162-638-11 | CERAMIC CHIP 1MF      | 16V                           | C619    | 1-102-228-00 | CERAMIC 470PF         | 10% 500V                      |
| C338    | 1-126-965-11 | ELECT 22MF            | 20% 50V                       | C620    | 1-124-347-00 | ELECT 100MF           | 20% 160V                      |
| C339    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       | C621    | 1-126-942-61 | ELECT 1000MF          | 20% 25V                       |
| C340    | 1-163-038-00 | CERAMIC CHIP 0.1MF    | 25V                           | C622    | 1-111-041-11 | ELECT 0.001F          | 20% 16V                       |
| C341    | 1-164-232-11 | CERAMIC CHIP 0.01MF   | 10% 50V                       | C625    | 1-164-222-11 | CERAMIC CHIP 0.22MF   | 25V                           |
| C344    | 1-126-967-11 | ELECT 47MF            | 20% 16V                       | C626    | 1-126-933-11 | ELECT 100MF           | 20% 16V                       |
|         |              |                       |                               | C627    | 1-126-933-11 | ELECT 100MF           | 20% 16V                       |
|         |              |                       |                               | C701    | 1-163-135-00 | CERAMIC CHIP 560PF    | 5% 50V                        |

A and C

The components identified by shading and marked **\*** are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque **\*** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

| REF.NO. | PART NO.      | DESCRIPTION  | REMARK | REF.NO. | PART NO.     | DESCRIPTION           | REMARK                              |
|---------|---------------|--|--------|---------|--------------|-----------------------|-------------------------------------|
| C702    | 1-163-135-00  | CERAMIC CHIP 560PF   | 5%     | 50V     |              | < DIODE >             |                                     |
| C703    | 1-163-135-00  | CERAMIC CHIP 560PF   | 5%     | 50V     | D001         | 8-719-057-56          | DIODE LS5360HL                      |
| C704    | 1-163-133-00  | CERAMIC CHIP 470PF   | 5%     | 50V     | D002         | 8-759-157-40          | IC $\mu$ PC574J                     |
| C705    | 1-163-133-00  | CERAMIC CHIP 470PF   | 5%     | 50V     | D004         | 8-719-109-85          | DIODE RD5.1ES-B2                    |
| C706    | 1-163-133-00  | CERAMIC CHIP 470PF   | 5%     | 50V     | D005         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C707    | 1-136-189-00  | FILM 0.1MF   | 10%    | 250V    | D006         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C709    | 1-162-114-00  | CERAMIC 0.0047MF   |        | 2KV     |              |                       |                                     |
| C710    | 1-126-967-11  | ELECT 47MF   | 20%    | 16V     | D014         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C800    | 1-126-772-11  | ELECT 1MF  | 20%    | 250V    | D100         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C803    | 1-136-106-00  | FILM 0.36MF  | 5%     | 200V    | D102         | 8-719-903-27          | DIODE 1SS168 (KV-M1450B/M1451B)     |
| C804    | 1-124-902-00  | ELECT 0.47MF   | 20%    | 50V     | D104         | 8-719-903-27          | DIODE 1SS168 (KV-M1450B/M1451B)     |
| C806    | 1-102-244-00  | CERAMIC 220PF  | 10%    | 500V    | D105         | 8-719-991-33          | DIODE 1SS133T-77 (KV-M1450K/M1451K) |
| C807    | 1-107-652-11  | ELECT 10MF   | 20%    | 250V    | D106         | 8-719-991-33          | DIODE 1SS133T-77 (KV-M1450K/M1451K) |
| C809    | 1-161-754-00  | CERAMIC 0.001MF  | 10%    | 2KV     | D107         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C810    | 1-129-702-00  | FILM 0.001MF   | 10%    | 400V    | D109         | 8-719-820-71          | DIODE 1SV214                        |
| C811    | 1-102-228-00  | CERAMIC 470PF  | 10%    | 500V    | D301         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C814    | 1-111-269-11  | FILM 0.007MF   | 3%     | 2KV     | D302         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C815    | 1-162-116-00  | CERAMIC 680PF  | 10%    | 2KV     | D305         | 1-249-412-11          | CARBON 390 5% 1/4W                  |
| C816    | 1-162-114-00  | CERAMIC 0.0047MF   |        | 2KV     | D307         | 8-719-991-33          | DIODE 1SS133T-77 (KV-M1450B/M1451B) |
| C817    | 1-136-559-11  | MYLAR 0.0047MF   | 10%    | 400V    | D308         | 8-719-991-33          | DIODE 1SS133T-77 (KV-M1450B/M1451B) |
| C819    | 1-162-318-11  | CERAMIC 0.001MF  | 10%    | 500V    | D310         | 8-719-991-33          | DIODE 1SS133T-77                    |
| C820    | 1-126-949-11  | ELECT 220MF  | 20%    | 35V     | D401         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
| C822    | 1-104-696-11  | FILM 0.015MF   | 10%    | 100V    | D402         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
| C823    | 1-106-375-12  | MYLAR 0.022MF  | 10%    | 250V    | D403         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
| C824    | 1-106-367-00  | MYLAR 0.01MF   | 10%    | 400V    | D404         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
| C825    | 1-136-104-00  | FILM 0.16MF  | 5%     | 200V    | D405         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
| C826    | 1-129-723-00  | FILM 0.068MF   | 10%    | 200V    | D406         | 8-719-109-97          | DIODE RD6.8ES-B2                    |
|         |               |  |        | D407    | 8-719-109-97 | DIODE RD6.8ES-B2      |                                     |
|         |               |  |        | D408    | 8-719-109-97 | DIODE RD6.8ES-B2      |                                     |
|         |               |  |        | D409    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
| CF101   | 1-404-801-11  | TRAP, CERAMIC (KV-M1450A/M1451A/M1450D/M1451D/M1450E/M1451E/M1450K/M1451K)                 |        | D410    | 8-719-109-97 | DIODE RD6.8ES-B2      |                                     |
|         | 1-409-429-11  | TRAP, CERAMIC (KV-M1450U/M1451U)   |        | D501    | 8-719-302-43 | DIODE EL1Z            |                                     |
|         | 1-409-430-11  | TRAP, CERAMIC (KV-M1450B/M1451B)   |        |         |              |                       |                                     |
| CF102   | 1-409-327-00  | TRAP, CERAMIC (6.5 MHz) (KV-M1450K/M1451K)   |        | D600    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
| CF103   | 1-567-100-00  | FILTER, CERAMIC (KV-M1450U/M1451U)   |        | D601    | 8-719-046-77 | DIODE EM1-V1          |                                     |
|         | 1-760-106-11  | FILTER, CERAMIC (KV-M1450A/M1451A/M1450B/M1451B/M1450D/M1451D/M1450E/M1451E/M1450K/M1451K) |        | D602    | 8-719-312-61 | DIODE EU-1Z           |                                     |
| CF104   | 1-567-101-11  | FILTER, CERAMIC (KV-M1450K/M1451K)   |        | D603    | 8-719-046-78 | DIODE EG-1Z-V1        |                                     |
| CF105   | 1-760-154-11  | TRAP, CERAMIC (KV-M1450B/M1451B)   |        | D604    | 8-719-312-61 | DIODE EU-1Z           |                                     |
| SWF101  | 1-579-120-11  | FILTER, SURFACE WAVE (KV-M1450A/M1451A/M1450D/M1451D/M1450E/M1451E)                        |        | D605    | 8-719-312-61 | DIODE EU-1Z           |                                     |
|         | 1-579-273-11  | FILTER, SURFACE WAVE (KV-M1450B/M1451B)  |        | D606    | 8-719-979-85 | DIODE EGP20G          |                                     |
|         | 1-579-414-11  | FILTER, SURFACE WAVE (KV-M1450K/M1451K)  |        | D607    | 8-719-302-43 | DIODE EL1Z            |                                     |
|         | 1-760-711-11  | FILTER, SURFACE WAVE (KV-M1450U/M1451U)  |        | D608    | 8-719-980-78 | DIODE ERA83-006       |                                     |
| SWF102  | 1-760-722-11  | FILTER, SURFACE WAVE (KV-M1450B/M1451B)  |        | D610    | 8-719-025-88 | DIODE GBU4JL-6088     |                                     |
|         |               |  |        | D611    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D701    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D702    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D703    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D704    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D705    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D706    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D707    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D708    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D709    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
|         |               |  |        | D716    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
| CN001   | *1-568-880-51 | PIN, CONNECTOR 5P  |        | D717    | 8-719-054-81 | DIODE 1SS292T-77      |                                     |
| CN201   | *1-564-506-11 | PLUG, CONNECTOR 3P   |        | D718    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
| CN601   | *1-580-844-11 | PIN, CONNECTOR (POWER)   |        | D719    | 8-719-054-81 | DIODE 1SS292T-77      |                                     |
| CN602   | 1-568-786-00  | PIN, CONNECTOR (5MM PITCH)   |        | D720    | 8-719-991-33 | DIODE 1SS133T-77      |                                     |
| CN603   | 1-568-786-11  | PIN, CONNECTOR (5MM PITCH)   |        | D721    | 8-719-054-81 | DIODE 1SS292T-77      |                                     |
| CN801   | *1-580-798-11 | CONNECTOR PIN (DY) 6P  |        | D802    | 8-719-302-43 | DIODE EL1Z            |                                     |
| CN804   | *1-568-879-11 | PIN, CONNECTOR 4P  |        | D804    | 8-719-028-72 | DIODE RGP02-17EL-6433 |                                     |
|         |               |  |        | D806    | 8-719-302-43 | DIODE EL1Z            |                                     |

The components identified by shading and marked **A** are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

**A and C**

| REF.NO. | PART NO.           | DESCRIPTION  | REMARK | REF.NO. | PART NO.     | DESCRIPTION                                     | REMARK         |
|---------|--------------------|--|--------|---------|--------------|---|----------------|
| D807    | 8-719-991-33       | DIODE 1SS133T-77   |        | L201    | 1-412-531-31 | INDUCTOR  | 33UH           |
|         |                    | < FUSE >   |        | L602    | 1-408-609-41 | INDUCTOR  | 33UH           |
| P601    | 1-576-230-11       | FUSE (15A 250V)  |        | L603    | 1-410-669-31 | INDUCTOR  | 33UH           |
|         | 1-533-230-11       | HOLDER FUSE  |        | L604    | 1-408-417-00 | INDUCTOR  | 47UH           |
|         |                    | < FERRITE BEAD >   |        | L800    | 1-412-553-11 | INDUCTOR  | 3.3MMH         |
| FB001   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        | L802    | 1-407-365-00 | COIL, CHOKE                                     |                |
| FB002   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        | L805    | 1-412-531-31 | INDUCTOR  | 33UH           |
| FB003   | 1-410-397-31       | FERRITE BEAD INDUCTOR 1.1UH  |        | L806    | 1-459-756-12 | COIL, HORIZONTAL LINEARITY                      |                |
| FB601   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        |         |              |   | < IC LINK >    |
| FB603   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        | P5602   | 1-532-686-91 | LINK, IC 2.7A (ICP-N75)                         |                |
| FB604   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        | P5603   | 1-532-637-91 | LINK, IC 1.0A (ICP-N25)                         |                |
| FB605   | 1-410-397-21       | FERRITE BEAD INDUCTOR 1.1UH  |        |         |              |   | < TRANSISTOR > |
|         |                    | < IC >   |        | Q001    | 8-729-922-66 | TRANSISTOR 2SC2410SN                            |                |
| IC001   | 8-759-368-69       | IC SAA5288ZP/014<br>(KV-M1450A/M1450B/M1450D/M1450E/M1450K/<br>M1450U)                       |        | Q002    | 8-729-026-41 | TRANSISTOR 2SA933AS-QRT                         |                |
|         | 8-759-368-23       | IC SAA5290ZP/014<br>(KV-M1451A/M1451B/M1451D/M1451E/M1451K/<br>M1451U)                       |        | Q005    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC002   | 8-759-280-74       | IC ST24C02CB1  |        | Q006    | 8-729-026-41 | TRANSISTOR 2SA933AS-QRT                         |                |
| IC003   | 8-741-790-11       | IC SBX1790-11  |        | Q007    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC101   | 8-759-333-17       | IC TDA9812 (KV-M1450B/M1451B)  |        | Q008    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
|         | 8-759-333-19       | IC TDA9806<br>(KV-M1450A/M1451A/M1450D/M1451D/M1450E/<br>M1451E/M1450K/M1451K/M1450U/M1451U) |        | Q009    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC301   | 8-759-333-44       | IC MC44007P<br>(KV-M1450A/M1451A/M1450E/M1451E/M1450U/<br>M1451U)                            |        | Q010    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
|         | 8-759-333-45       | IC MC44002P<br>(KV-M1450B/M1451B/M1450D/M1451D/M1450K/<br>M1451K)                            |        | Q011    | 8-729-900-89 | TRANSISTOR DTC144ES                             |                |
| IC302   | 8-759-333-46       | IC MC44140P  |        | Q012    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC401   | 8-759-041-82       | IC TDA1013B  |        | Q013    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC501   | 8-759-324-56       | IC TDA9302H  |        | Q014    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC601   | 8-749-011-02       | IC STR-S5706   |        | Q015    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
| IC603   | 8-759-337-99       | IC TDA8139   |        | Q016    | 8-729-216-22 | TRANSISTOR 2SC1162-G                            |                |
|         |                    | < SOCKET >   |        | Q100    | 8-729-901-01 | TRANSISTOR DTC144EK                             |                |
| J201    | 1-568-267-21       | JACK   |        | Q101    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146<br>(KV-M1450B/M1451B) |                |
| J401    | 1-695-551-11       | SOCKET 21P   |        | Q102    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146<br>(KV-M1450B/M1451B) |                |
|         | 1-701-15251-192-11 | SOCKET 21P   |        | Q103    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146<br>(KV-M1450B/M1451B) |                |
|         |                    | < COIL >   |        | Q105    | 8-729-901-01 | TRANSISTOR DTC144EK                             |                |
| L101    | 1-410-669-31       | INDUCTOR 33UH  |        | Q107    | 8-729-119-78 | TRANSISTOR 2SC2785-HFE                          |                |
| L105    | 1-408-411-00       | INDUCTOR 15UH  |        | Q109    | 8-729-022-54 | TRANSISTOR 2SC3779C, D-AA<br>(KV-M1450B/M1451B) |                |
| L108    | 1-408-405-00       | INDUCTOR 4.7UH (KV-M1450K/M1451K)  |        | Q111    | 8-729-900-89 | TRANSISTOR DTC144ES (KV-M1450K/M1451K)          |                |
|         | 1-408-408-00       | INDUCTOR 8.2UH   |        | Q112    | 8-729-119-78 | TRANSISTOR 2SC2785-HFE                          |                |
|         |                    | (KV-M1450A/M1451A/M1450B/M1451B/M1450D/<br>M1451D/M1450E/M1451E/M1450U/M1451U)               |        | Q113    | 8-729-900-89 | TRANSISTOR DTC144ES (KV-M1450K/M1451K)          |                |
| L109    | 1-403-686-11       | COIL   |        | Q114    | 8-729-901-01 | TRANSISTOR DTC144EK                             |                |
| L110    | 1-410-673-31       | INDUCTOR 68UH  |        | Q115    | 8-729-119-76 | TRANSISTOR 2SA1175-HFE<br>(KV-M1450B/M1451B)    |                |
| L111    | 1-410-665-31       | INDUCTOR 15UH (KV-M1450B/M1451B)   |        | Q116    | 8-729-900-89 | TRANSISTOR DTC144ES (KV-M1450B/M1451B)          |                |
| L112    | 1-408-417-00       | INDUCTOR 47UH  |        | Q300    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
| L113    | 1-410-985-11       | INDUCTOR CHIP 0.22UH<br>(KV-M1450A/M1451A/M1450B/M1451B/M1450D/<br>M1451D/M1450E/M1451E)     |        | Q301    | 8-729-119-78 | TRANSISTOR 2SC2785-HFE                          |                |
|         | 1-216-295-00       | METAL GLAZE 0 5% 1/10W<br>(KV-M1450U/M1451U)   |        | Q302    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
|         |                    |  |        | Q303    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
|         |                    |  |        | Q304    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
|         |                    |  |        | Q305    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
|         |                    |  |        | Q306    | 8-729-027-23 | TRANSISTOR DTC114EKA-T146                       |                |
|         |                    |  |        | Q307    | 8-729-119-76 | TRANSISTOR 2SA1175-HFE<br>(KV-M1450B/M1451B)    |                |
|         |                    |  |        | Q401    | 8-729-119-78 | TRANSISTOR 2SC2785-HFE                          |                |
|         |                    |  |        | Q402    | 8-729-216-22 | TRANSISTOR 2SA1162-G                            |                |
|         |                    |  |        | Q403    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
|         |                    |  |        | Q404    | 8-729-920-74 | TRANSISTOR 2SC2412K-QR                          |                |
|         |                    |  |        | Q500    | 8-729-017-06 | TRANSISTOR 2SC4793                              |                |

## A and C

| REF.NO.      | PART NO.     | DESCRIPTION               | REMARK        | REF.NO. | PART NO.     | DESCRIPTION | REMARK                              |
|--------------|--------------|---------------------------|---------------|---------|--------------|-------------|-------------------------------------|
| Q501         | 8-729-119-78 | TRANSISTOR 2SC2785-HFE    |               | R034    | 1-249-429-11 | CARBON      | 10K 5% 1/4W                         |
| Q600         | 8-729-119-78 | TRANSISTOR 2SC2785-HFE    |               | R035    | 1-247-863-91 | CARBON      | 22K 5% 1/4W                         |
| Q602         | 8-729-900-65 | TRANSISTOR DTA144ES       |               | R036    | 1-216-059-00 | METAL GLAZE | 2.7K 5% 1/10W                       |
| Q701         | 8-729-119-78 | TRANSISTOR 2SC2785-HFE    |               | R037    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W                       |
| Q702         | 8-729-119-78 | TRANSISTOR 2SC2785-HFE    |               | R039    | 1-216-089-00 | METAL GLAZE | 47K 5% 1/10W                        |
| Q703         | 8-729-119-78 | TRANSISTOR 2SC2785-HFE    |               | R040    | 1-216-065-00 | METAL GLAZE | 4.7K 5% 1/10W                       |
| Q704         | 8-729-906-70 | TRANSISTOR BF871-127      |               | R042    | 1-216-230-00 | METAL GLAZE | 22K 5% 1/8W                         |
| Q705         | 8-729-906-70 | TRANSISTOR BF871-127      |               | R044    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| Q706         | 8-729-906-70 | TRANSISTOR BF871-127      |               | R045    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W                        |
| Q707         | 8-729-200-17 | TRANSISTOR 2SA1091-0      |               | R046    | 1-216-105-91 | METAL GLAZE | 220K 5% 1/10W                       |
| Q708         | 8-729-200-17 | TRANSISTOR 2SA1091-0      |               | R047    | 1-216-077-00 | METAL GLAZE | 15K 5% 1/10W                        |
| Q709         | 8-729-200-17 | TRANSISTOR 2SA1091-0      |               | R049    | 1-216-041-00 | METAL GLAZE | 470 5% 1/10W                        |
| Q801         | 8-729-119-80 | TRANSISTOR 2SC2688-LK     |               | R052    | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W                         |
| Q802         | 8-729-031-72 | TRANSISTOR S2055N-16E314A |               | R055    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W                       |
| Q803         | 8-729-900-89 | TRANSISTOR DTC144ES       |               | R060    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| < RESISTOR > |              |                           |               |         |              |             |                                     |
| JR003        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R062    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR004        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R063    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| JR007        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R064    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR008        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R065    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR009        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R066    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR012        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R067    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W                        |
| JR013        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R068    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR014        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R069    | 1-247-863-91 | CARBON      | 22K 5% 1/4W                         |
| JR015        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R070    | 1-216-065-00 | METAL GLAZE | 4.7K 5% 1/10W                       |
| JR017        | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R071    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W                        |
| JR018        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R072    | 1-216-230-00 | METAL GLAZE | 22K 5% 1/8W                         |
| JR019        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R073    | 1-216-089-00 | METAL GLAZE | 47K 5% 1/10W                        |
| JR021        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R074    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W                        |
| JR024        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R075    | 1-249-436-11 | CARBON      | 39K 5% 1/4W                         |
| JR026        | 1-216-296-00 | METAL GLAZE               | 0 5% 1/8W     | R078    | 1-216-071-00 | METAL GLAZE | 8.2K 5% 1/10W                       |
| R001         | 1-216-198-91 | METAL GLAZE               | 1K 5% 1/8W    | R079    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| R002         | 1-216-033-00 | METAL GLAZE               | 220 5% 1/10W  | R080    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W                       |
| R005         | 1-216-081-00 | METAL GLAZE               | 22K 5% 1/10W  | R081    | 1-249-438-11 | CARBON      | 56K 5% 1/4W                         |
| R006         | 1-216-089-00 | METAL GLAZE               | 47K 5% 1/10W  | R088    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| R008         | 1-216-031-00 | METAL GLAZE               | 180 5% 1/10W  | R089    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| R009         | 1-216-049-00 | METAL GLAZE               | 1K 5% 1/10W   | R090    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W                       |
| R010         | 1-216-041-00 | METAL GLAZE               | 470 5% 1/10W  | R091    | 1-249-427-11 | CARBON      | 6.8K 5% 1/4W                        |
| R011         | 1-216-049-00 | METAL GLAZE               | 1K 5% 1/10W   | R093    | 1-216-065-00 | METAL GLAZE | 4.7K 5% 1/10W                       |
| R012         | 1-216-089-00 | METAL GLAZE               | 47K 5% 1/10W  | R094    | 1-216-085-00 | METAL GLAZE | 33K 5% 1/10W                        |
| R013         | 1-216-049-00 | METAL GLAZE               | 1K 5% 1/10W   | R095    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W                        |
| R014         | 1-216-065-00 | METAL GLAZE               | 4.7K 5% 1/10W | R096    | 1-216-033-00 | METAL GLAZE | 220 5% 1/10W                        |
| R015         | 1-216-065-00 | METAL GLAZE               | 4.7K 5% 1/10W | R097    | 1-216-051-00 | METAL GLAZE | 1.2K 5% 1/10W                       |
| R016         | 1-216-025-00 | METAL GLAZE               | 100 5% 1/10W  | R098    | 1-216-051-00 | METAL GLAZE | 1.2K 5% 1/10W                       |
| R017         | 1-216-025-00 | METAL GLAZE               | 100 5% 1/10W  | R099    | 1-216-200-11 | METAL GLAZE | 1.2K 5% 1/8W                        |
| R018         | 1-216-081-00 | METAL GLAZE               | 22K 5% 1/10W  | R102    | 1-216-234-91 | METAL GLAZE | 33K 5% 1/8W                         |
| R019         | 1-216-174-00 | METAL GLAZE               | 100 5% 1/8W   | R104    | 1-216-059-00 | METAL GLAZE | 2.7K 5% 1/10W<br>(KV-M1450B/M1451B) |
| R020         | 1-216-089-00 | METAL GLAZE               | 27K 5% 1/10W  | R105    | 1-216-025-00 | METAL GLAZE | 100 5% 1/10W<br>(KV-M1450B/M1451B)  |
| R021         | 1-216-174-00 | METAL GLAZE               | 100 5% 1/8W   | R106    | 1-216-053-00 | METAL GLAZE | 1.5K 5% 1/10W<br>(KV-M1450B/M1451B) |
| R022         | 1-216-295-00 | METAL GLAZE               | 0 5% 1/10W    | R107    | 1-216-017-91 | METAL GLAZE | 47 5% 1/10W<br>(KV-M1450B/M1451B)   |
| R024         | 1-216-089-00 | METAL GLAZE               | 47K 5% 1/10W  | R108    | 1-216-067-00 | METAL GLAZE | 5.6K 5% 1/10W                       |
| R025         | 1-216-222-00 | METAL GLAZE               | 10K 5% 1/8W   | R109    | 1-216-025-00 | METAL GLAZE | 100 5% 1/10W<br>(KV-M1450B/M1451B)  |
| R026         | 1-216-081-00 | METAL GLAZE               | 22K 5% 1/10W  | R110    | 1-216-101-00 | METAL GLAZE | 150K 5% 1/10W                       |
| R027         | 1-216-206-00 | METAL GLAZE               | 2.2K 5% 1/8W  | R111    | 1-216-085-00 | METAL GLAZE | 33K 5% 1/10W                        |
| R028         | 1-216-081-00 | METAL GLAZE               | 22K 5% 1/10W  |         |              |             |                                     |
| R029         | 1-216-081-00 | METAL GLAZE               | 22K 5% 1/10W  |         |              |             |                                     |
| R030         | 1-215-900-11 | METAL OXIDE               | 22K 5% 2W F   |         |              |             |                                     |
| R031         | 1-216-065-00 | METAL GLAZE               | 4.7K 5% 1/10W |         |              |             |                                     |
| R032         | 1-216-049-00 | METAL GLAZE               | 1K 5% 1/10W   |         |              |             |                                     |
| R033         | 1-216-049-00 | METAL GLAZE               | 1K 5% 1/10W   |         |              |             |                                     |

A and C

| REF.NO. | PART NO.     | DESCRIPTION | REMARK   | REF.NO. | PART NO.     | DESCRIPTION  | REMARK |  |
|---------|--------------|-------------|--|---------|--------------|--|--------|--|
| R112    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W<br>(KV-M1450B/M1451B)  | R161    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W<br>(KV-M1450A/M1451A/M1450D/M1451D/M1450E/M1451E/M1450K/M1451K/M1450U/M1451U) |        |  |
| R113    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W<br>(KV-M1450B/M1451B)  | R162    | 1-216-017-91 | METAL GLAZE 47 5% 1/10W<br>(KV-M1450B/M1451B)  |        |  |
| R114    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W<br>(KV-M1450B/M1451B)   | R163    | 1-249-407-11 | CARBON 150 5% 1/4W   |        |  |
| R115    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W<br>(KV-M1450B/M1451B)  | R167    | 1-216-246-91 | METAL GLAZE 100K 5% 1/8W   |        |  |
| R116    | 1-216-049-00 | METAL GLAZE | 1K 5% 1/10W  | R168    | 1-249-407-11 | CARBON 150 5% 1/4W   |        |  |
| R117    | 1-216-089-00 | METAL GLAZE | 47K 5% 1/10W   | R169    | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W<br>(KV-M1450B/M1451B)   |        |  |
| R118    | 1-216-075-00 | METAL GLAZE | 12K 5% 1/10W   | R170    | 1-216-063-00 | METAL GLAZE 3.9K 5% 1/10W<br>(KV-M1450B/M1451B)  |        |  |
| R122    | 1-216-029-00 | METAL GLAZE | 150 5% 1/10W<br>(KV-M1450A/M1451A/M1450B/M1451B/M1450D/M1451D/M1450E/M1451E/M1450U/M1451U) | R171    | 1-216-069-00 | METAL GLAZE 6.8K 5% 1/10W<br>(KV-M1450B/M1451B)  |        |  |
|         | 1-216-025-91 | METAL GLAZE | 100 5% 1/10W<br>(KV-M1450K/M1451K)   | R175    | 1-216-049-00 | METAL GLAZE 1K 5% 1/10W  |        |  |
| R123    | 1-216-089-00 | METAL GLAZE | 47K 5% 1/10W   | R176    | 1-216-049-00 | METAL GLAZE 1K 5% 1/10W  |        |  |
| R124    | 1-216-025-00 | METAL GLAZE | 100 5% 1/10W   | R177    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W   |        |  |
| R125    | 1-216-025-00 | METAL GLAZE | 100 5% 1/10W   | R178    | 1-216-055-00 | METAL GLAZE 1.8K 5% 1/10W  |        |  |
| R126    | 1-216-025-00 | METAL GLAZE | 100 5% 1/10W   | R179    | 1-216-212-00 | METAL GLAZE 3.9K 5% 1/8W   |        |  |
| R127    | 1-216-180-00 | METAL GLAZE | 180 5% 1/8W  | R180    | 1-216-049-00 | METAL GLAZE 1K 5% 1/10W<br>(KV-M1450B/M1451B)  |        |  |
| R128    | 1-216-073-00 | METAL GLAZE | 10K 5% 1/10W   | R181    | 1-216-182-00 | METAL GLAZE 220 5% 1/8W  |        |  |
| R133    | 1-249-429-11 | CARBON      | 10K 5% 1/4W  | R182    | 1-216-182-00 | METAL GLAZE 220 5% 1/8W  |        |  |
| R134    | 1-216-029-00 | METAL GLAZE | 150 5% 1/10W<br>(KV-M1450U/M1451U)   | R301    | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W   |        |  |
|         | 1-216-031-00 | METAL GLAZE | 180 5% 1/10W<br>(KV-M1450A/M1451A/M1450B/M1451B/M1450D/M1451D/M1450E/M1451E/M1450K/M1451K) | R302    | 1-216-037-00 | METAL GLAZE 330 5% 1/10W   |        |  |
| R136    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W  | R303    | 1-216-090-00 | METAL GLAZE 51K 5% 1/10W   |        |  |
| R137    | 1-216-109-00 | METAL GLAZE | 330K 5% 1/10W  | R304    | 1-216-025-00 | METAL GLAZE 100 5% 1/10W   |        |  |
| R138    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W   | R305    | 1-216-025-00 | METAL GLAZE 100 5% 1/10W   |        |  |
| R141    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W  | R307    | 1-216-121-00 | METAL GLAZE 1M 5% 1/10W  |        |  |
| R142    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W  | R308    | 1-216-234-00 | METAL GLAZE 33K 5% 1/8W  |        |  |
| R143    | 1-216-295-00 | METAL GLAZE | 0 5% 1/10W<br>(KV-M1450A/M1451A/M1450B/M1451B/M1450D/M1451D/M1450E/M1451E/M1450U/M1451U)   | R309    | 1-216-121-00 | METAL GLAZE 1M 5% 1/10W  |        |  |
| R144    | 1-216-206-00 | METAL GLAZE | 2.2K 5% 1/8W<br>(KV-M1450K/M1451K)   | R310    | 1-216-089-00 | METAL GLAZE 47K 5% 1/10W   |        |  |
| R145    | 1-216-206-00 | METAL GLAZE | 2.2K 5% 1/8W<br>(KV-M1450K/M1451K)   | R311    | 1-216-093-00 | METAL GLAZE 68K 5% 1/10W   |        |  |
| R146    | 1-216-043-91 | METAL GLAZE | 560 5% 1/10W   | R312    | 1-216-097-00 | METAL GLAZE 100K 5% 1/10W  |        |  |
| R147    | 1-216-043-91 | METAL GLAZE | 560 5% 1/10W<br>(KV-M1451K)  | R313    | 1-216-045-00 | METAL GLAZE 680 5% 1/10W   |        |  |
| R149    | 1-216-057-00 | METAL GLAZE | 2.2K 5% 1/10W<br>(KV-M1450K/M1451K)  | R314    | 1-216-045-00 | METAL GLAZE 680 5% 1/10W   |        |  |
| R151    | 1-216-097-00 | METAL GLAZE | 100K 5% 1/10W  | R315    | 1-216-045-00 | METAL GLAZE 680 5% 1/10W   |        |  |
| R153    | 1-216-097-00 | METAL GLAZE | 100K 5% 1/10W  | R316    | 1-216-033-00 | METAL GLAZE 220 5% 1/10W   |        |  |
| R154    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W   | R317    | 1-216-182-00 | METAL GLAZE 220 5% 1/8W  |        |  |
| R155    | 1-216-081-00 | METAL GLAZE | 22K 5% 1/10W   | R318    | 1-216-019-00 | METAL GLAZE 56 5% 1/10W  |        |  |
| R157    | 1-216-049-91 | METAL GLAZE | 1K 5% 1/10W<br>(KV-M1450B/M1451B)  | R322    | 1-216-022-00 | METAL GLAZE 75 5% 1/10W  |        |  |
| R158    | 1-216-039-00 | METAL GLAZE | 390 5% 1/10W<br>(KV-M1450A/M1451A/M1450D/M1451D/M1450E/M1451E/M1450K/M1451K/M1450U/M1451U) | R323    | 1-216-089-00 | METAL GLAZE 47K 5% 1/10W   |        |  |
|         | 1-216-031-00 | METAL GLAZE | 180 5% 1/10W<br>(KV-M1450B/M1451B)   | R325    | 1-216-089-00 | METAL GLAZE 47K 5% 1/10W   |        |  |
| R159    | 1-216-061-00 | METAL GLAZE | 3.3K 5% 1/10W  | R333    | 1-216-037-00 | METAL GLAZE 330 5% 1/10W   |        |  |
| R160    | 1-216-238-91 | METAL GLAZE | 47K 5% 1/8W  | R334    | 1-216-033-00 | METAL GLAZE 220 5% 1/10W   |        |  |
|         |              |             |  | R335    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W   |        |  |
|         |              |             |  | R336    | 1-216-296-00 | METAL GLAZE 0 5% 1/8W  |        |  |
|         |              |             |  | R337    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W   |        |  |
|         |              |             |  | R339    | 1-216-061-00 | METAL GLAZE 3.3K 5% 1/10W  |        |  |
|         |              |             |  | R340    | 1-216-121-91 | METAL GLAZE 1M 5% 1/10W  |        |  |
|         |              |             |  | R341    | 1-216-073-00 | METAL GLAZE 12K 5% 1/10W   |        |  |
|         |              |             |  | R342    | 1-216-186-00 | METAL GLAZE 330 5% 1/8W  |        |  |
|         |              |             |  | R343    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W   |        |  |
|         |              |             |  | R344    | 1-216-295-00 | METAL GLAZE 0 5% 1/10W   |        |  |
|         |              |             |  | R345    | 1-216-089-00 | METAL GLAZE 47K 5% 1/10W   |        |  |
|         |              |             |  | R347    | 1-216-041-00 | METAL GLAZE 470 5% 1/10W<br>(KV-M1450B/M1451B)   |        |  |
|         |              |             |  | R348    | 1-216-073-00 | METAL GLAZE 10K 5% 1/10W<br>(KV-M1450B/M1451B)   |        |  |

**A and C**

The components identified by shading and marked A are critical for safety.

Replace only with the part number specified.

Les composants identifies par une trame et une marque sont critiques pour la securite.  
Ne les remplacer que par une piece portant le numero specifie.

| REF.NO.               | PART NO.     | DESCRIPTION           | REMARK   | REF.NO. | PART NO.     | DESCRIPTION | REMARK           |
|-----------------------|--------------|-----------------------|--|---------|--------------|-------------|------------------|
| R349                  | 1-216-105-00 | METAL GLAZE           | 220K 5% 1/10W<br>(KV-M1450B/M1451B)                            | R615    | 1-217-371-00 | FUSIBLE     | 0.47 10% 1/4W F  |
| R350                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W<br>(KV-M1450B/M1451B)                             | R617    | 1-216-659-11 | METAL CHIP  | 2.2K 0.50% 1/10W |
| R351                  | 1-216-292-11 | METAL GLAZE           | 8.2M 5% 1/8W<br>(KV-M1450B/M1451B/M1450D/M1451D/M1450K/M1451K) | R618    | 1-216-659-11 | METAL CHIP  | 2.2K 0.50% 1/10W |
| R620                  | 1-215-479-00 | METAL                 | 270K 1% 1/4W   |         |              |             |                  |
| R621                  | 1-249-429-11 | CARBON                | 10K 5% 1/4W  |         |              |             |                  |
| R622                  | 1-247-895-91 | METAL GLAZE           | 470K 5% 1/4W   |         |              |             |                  |
| R623                  | 1-216-081-00 | METAL GLAZE           | 22K 5% 1/10W   |         |              |             |                  |
| R624                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R625                  | 1-216-073-00 | METAL GLAZE           | 10K 5% 1/10W   |         |              |             |                  |
| R626                  | 1-216-089-00 | METAL GLAZE           | 47K 5% 1/10W   |         |              |             |                  |
| R627                  | 1-216-346-00 | METAL OXIDE           | 0.56 5% 1W F   |         |              |             |                  |
| R630                  | 1-249-401-11 | CARBON                | 47 5% 1/4W   |         |              |             |                  |
| R701                  | 1-216-198-91 | METAL GLAZE           | 1K 5% 1/8W   |         |              |             |                  |
| R702                  | 1-249-417-11 | CARBON                | 1K 5% 1/4W   |         |              |             |                  |
| R705                  | 1-216-158-00 | METAL GLAZE           | 22 5% 1/8W   |         |              |             |                  |
| R706                  | 1-216-009-00 | METAL GLAZE           | 22 5% 1/10W  |         |              |             |                  |
| R707                  | 1-216-158-00 | METAL GLAZE           | 22 5% 1/8W   |         |              |             |                  |
| R708                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R709                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R710                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R711                  | 1-216-049-00 | METAL GLAZE           | 1K 5% 1/10W  |         |              |             |                  |
| R714                  | 1-216-198-91 | METAL GLAZE           | 1K 5% 1/8W   |         |              |             |                  |
| R715                  | 1-249-417-11 | CARBON                | 1K 5% 1/4W   |         |              |             |                  |
| R716                  | 1-216-049-91 | METAL GLAZE           | 1K 5% 1/10W  |         |              |             |                  |
| R717                  | 1-247-758-00 | CARBON                | 3.3K 5% 1/2W   |         |              |             |                  |
| R718                  | 1-247-758-00 | CARBON                | 3.3K 5% 1/2W   |         |              |             |                  |
| R719                  | 1-247-758-00 | CARBON                | 3.3K 5% 1/2W   |         |              |             |                  |
| R720                  | 1-216-463-00 | METAL OXIDE           | 12K 5% 2W F  |         |              |             |                  |
| R721                  | 1-216-463-00 | METAL OXIDE           | 12K 5% 2W F  |         |              |             |                  |
| R722                  | 1-216-463-00 | METAL OXIDE           | 12K 5% 2W F  |         |              |             |                  |
| R726                  | 1-202-719-00 | SOLID                 | 1M 10% 1/2W  |         |              |             |                  |
| R727                  | 1-202-838-00 | SOLID                 | 100K 10% 1/2W  |         |              |             |                  |
| R729                  | 1-216-348-00 | METAL OXIDE           | 0.82 5% 1W F   |         |              |             |                  |
| R731                  | 1-202-719-00 | SOLID                 | 1M 10% 1/2W  |         |              |             |                  |
| R734                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R735                  | 1-216-033-00 | METAL GLAZE           | 220 5% 1/10W   |         |              |             |                  |
| R736                  | 1-247-815-91 | CARBON                | 220 5% 1/4W  |         |              |             |                  |
| R744                  | 1-249-421-11 | CARBON                | 2.2K 5% 1/4W   |         |              |             |                  |
| R745                  | 1-249-421-11 | CARBON                | 2.2K 5% 1/4W   |         |              |             |                  |
| R746                  | 1-249-421-11 | CARBON                | 2.2K 5% 1/4W   |         |              |             |                  |
| R800                  | 1-215-864-00 | METAL OXIDE           | 150 5% 1W F  |         |              |             |                  |
| R801                  | 1-247-891-00 | CARBON                | 330K 5% 1/4W   |         |              |             |                  |
| R802                  | 1-247-807-31 | CARBON                | 100 5% 1/4W  |         |              |             |                  |
| R803                  | 1-216-081-00 | METAL GLAZE           | 22K 5% 1/10W   |         |              |             |                  |
| R804                  | 1-217-778-11 | FUSIBLE               | 1K 5% 1W F   |         |              |             |                  |
| R806                  | 1-216-353-00 | METAL OXIDE           | 2.2 5% 1W F  |         |              |             |                  |
| R807                  | 1-216-013-00 | METAL GLAZE           | 33 5% 1/10W  |         |              |             |                  |
| R808                  | 1-202-833-11 | SOLID                 | 18K 10% 1/2W   |         |              |             |                  |
| R810                  | 1-247-895-91 | CARBON                | 470K 5% 1/4W   |         |              |             |                  |
| R601                  | 1-205-909-11 | WIREWOOD              | 1.3 5% 10W   |         |              |             |                  |
| R603                  | 1-215-860-11 | METAL OXIDE           | 33 5% 1W F   |         |              |             |                  |
| R604                  | 1-215-927-00 | METAL OXIDE           | 47K 5% 3W F  |         |              |             |                  |
| R606                  | 1-249-441-11 | CARBON                | 100K 5% 1/4W   |         |              |             |                  |
| R607                  | 1-216-366-00 | METAL OXIDE           | 0.56 5% 2W F   |         |              |             |                  |
| R812                  | 1-215-869-11 | METAL OXIDE           | 1K 5% 1W F   |         |              |             |                  |
| R814                  | 1-217-811-11 | FUSIBLE               | 0.47 5% 1/4W   |         |              |             |                  |
| R816                  | 1-216-369-00 | METAL OXIDE           | 1 5% 2W F  |         |              |             |                  |
| R817                  | 1-216-447-00 | METAL OXIDE           | 27 5% 2W F   |         |              |             |                  |
| R818                  | 1-202-813-00 | SOLID                 | 22K 10% 1/2W   |         |              |             |                  |
| R608                  | 1-216-645-11 | METAL CHIP            | 560 0.50% 1/10W  |         |              |             |                  |
| R609                  | 1-215-861-00 | METAL OXIDE           | 47 5% 1W F   |         |              |             |                  |
| R610                  | 1-249-419-11 | CARBON                | 1.5K 5% 1/4W   |         |              |             |                  |
| R611                  | 1-215-430-00 | METAL                 | 2.4K 1% 1/4W   |         |              |             |                  |
| R612                  | 1-202-719-91 | SOLID                 | 1M 10% 1/2W  |         |              |             |                  |
| < VARIABLE RESISTOR > |              |                       |  |         |              |             |                  |
| RV102                 | 1-241-765-11 | RES, ADJ, METAL GLAZE | 22K<br>(KV-M1450B/M1451B)                                      |         |              |             |                  |

< VARIABLE RESISTOR >

RV102 1-241-765-11 RES, ADJ, METAL GLAZE 22K  
(KV-M1450B/M1451B)

The components identified by shading and marked **A** are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

**A and C**

**C**

**REMARK**

| REF.NO.                 | PART NO.     | DESCRIPTION                | REMARK |
|-------------------------|--------------|----------------------------|--------|
| RV703                   | 1-230-641-11 | RES, ADJ, METAL GLAZE 2.2M |        |
| RV704                   | 1-230-641-11 | RES, ADJ, METAL GLAZE 2.2M |        |
| <b>&lt; SWITCH &gt;</b> |              |                            |        |
| S001                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| S002                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| S003                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| S004                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| S005                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| S006                    | 1-571-532-21 | SWITCH, TACTIL             |        |
| 8601                    | 1-571-433-21 | SWITCH, PUSH (AC POWER)    |        |

**< TRANSFORMER >**

|      |              |                                       |
|------|--------------|---------------------------------------|
| T601 | 1-427-962-11 | TRANSFORMER, LINE FILTER              |
| T602 | 1-427-994-11 | TRANSFORMER, CONVERTER                |
| T801 | 1-437-090-31 | HDT                                   |
| T802 | 1-431-186-21 | TRANSFORMER ASSY, FILBACKING 17V/0.2A |

**< THERMISTOR >**

|        |              |                      |
|--------|--------------|----------------------|
| THP601 | 1-306-169-12 | TERMISTOR (POSITIVE) |
|--------|--------------|----------------------|

**< TUNER >**

|       |              |   |
|-------|--------------|---|
| TU101 | 1-693-303-11 | TUNER (TELELX001A) (KV-M1450A/M1451A)             |
|       | 1-693-310-11 | TUNER (TELELX002A) (KV-M1450B/M1451B)             |
|       | 8-598-331-00 | TUNER (BT-AC401) (KV-M1450D/M1451D/M1450E/M1451E) |
|       | 1-693-302-11 | TUNER (U1315) (KV-M1450K/M1451K)                  |
|       | 1-693-301-11 | TUNER (U1343) (KV-M1450U)                         |
|       | 8-598-333-00 | TUNER (BT-AU601) (KV-M1451U)                      |

**< CRYSTAL >**

|      |              |                                      |
|------|--------------|--------------------------------------|
| X001 | 1-578-774-11 | VIBRATOR, CRYSTAL                    |
| X301 | 1-760-907-21 | VIBRATOR, CRYSTAL (KV-M1450K/M1451K) |
| X302 | 1-760-710-21 | VIBRATOR, CRYSTAL                    |

|               |                   |  |
|---------------|-------------------|--|
| *A-1638-064-A | C BOARD, COMPLETE | (KV-M1450A/M1451A/M1450B/M1451B/M1450E/M1451E) |
| *A-1638-063-A | C BOARD, COMPLETE | (KV-M1450D/M1451D/M1450K/M1451K/M1450U/M1451U) |

**< CAPACITOR >**

|      |              |                    |     |      |
|------|--------------|--------------------|-----|------|
| C701 | 1-163-135-00 | CERAMIC CHIP 560PF | 5%  | 50V  |
| C702 | 1-163-135-00 | CERAMIC CHIP 560PF | 5%  | 50V  |
| C703 | 1-163-135-00 | CERAMIC CHIP 560PF | 5%  | 50V  |
| C704 | 1-163-133-00 | CERAMIC CHIP 470PF | 5%  | 50V  |
| C705 | 1-163-133-00 | CERAMIC CHIP 470PF | 5%  | 50V  |
| C706 | 1-163-133-00 | CERAMIC CHIP 470PF | 5%  | 50V  |
| C707 | 1-136-189-00 | FILM 0.1MF         | 10% | 250V |
| C709 | 1-162-114-00 | CERAMIC 0.0047MF   |     | 2KV  |
| C710 | 1-126-967-11 | ELECT 47MF         | 20% | 16V  |

**< DIODE >**

|      |              |                  |
|------|--------------|------------------|
| D701 | 8-719-991-33 | DIODE 1SS133T-77 |
| D702 | 8-719-991-33 | DIODE 1SS133T-77 |
| D703 | 8-719-991-33 | DIODE 1SS133T-77 |
| D704 | 8-719-991-33 | DIODE 1SS133T-77 |
| D705 | 8-719-991-33 | DIODE 1SS133T-77 |
| D706 | 8-719-991-33 | DIODE 1SS133T-77 |
| D707 | 8-719-991-33 | DIODE 1SS133T-77 |

| REF.NO. | PART NO.     | DESCRIPTION      | REMARK |
|---------|--------------|------------------|--------|
| D708    | 8-719-991-33 | DIODE 1SS133T-77 |        |
| D709    | 8-719-991-33 | DIODE 1SS133T-77 |        |
| D716    | 8-719-991-33 | DIODE 1SS133T-77 |        |
| D717    | 8-719-054-81 | DIODE 1SS292T-77 |        |
| D718    | 8-719-991-33 | DIODE 1SS133T-77 |        |
| D719    | 8-719-054-81 | DIODE 1SS292T-77 |        |
| D720    | 8-719-991-33 | DIODE 1SS133T-77 |        |
| D721    | 8-719-054-81 | DIODE 1SS292T-77 |        |

**< CRT SOCKET >**

|      |              |             |
|------|--------------|-------------|
| 8701 | 1-251-921-11 | SOCKET, CRT |
|------|--------------|-------------|

**< TRANSISTOR >**

|      |              |                        |
|------|--------------|------------------------|
| Q701 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |
| Q702 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |
| Q703 | 8-729-119-78 | TRANSISTOR 2SC2785-HFE |
| Q704 | 8-729-906-70 | TRANSISTOR BF871-127   |
| Q705 | 8-729-906-70 | TRANSISTOR BF871-127   |
| Q706 | 8-729-906-70 | TRANSISTOR BF871-127   |
| Q707 | 8-729-200-17 | TRANSISTOR 2SA1091-0   |
| Q708 | 8-729-200-17 | TRANSISTOR 2SA1091-0   |
| Q709 | 8-729-200-17 | TRANSISTOR 2SA1091-0   |

**< RESISTOR >**

|      |              |             |      |     |       |
|------|--------------|-------------|------|-----|-------|
| R701 | 1-216-198-91 | METAL GLAZE | 1K   | 5%  | 1/8W  |
| R702 | 1-249-417-11 | CARBON      | 1K   | 5%  | 1/4W  |
| R705 | 1-216-158-00 | METAL GLAZE | 22   | 5%  | 1/8W  |
| R706 | 1-216-009-00 | METAL GLAZE | 22   | 5%  | 1/10W |
| R707 | 1-216-158-00 | METAL GLAZE | 22   | 5%  | 1/8W  |
| R708 | 1-216-033-00 | METAL GLAZE | 220  | 5%  | 1/10W |
| R709 | 1-216-033-00 | METAL GLAZE | 220  | 5%  | 1/10W |
| R710 | 1-216-033-00 | METAL GLAZE | 220  | 5%  | 1/10W |
| R711 | 1-216-049-00 | METAL GLAZE | 1K   | 5%  | 1/10W |
| R714 | 1-216-198-91 | METAL GLAZE | 1K   | 5%  | 1/8W  |
| R715 | 1-249-417-11 | CARBON      | 1K   | 5%  | 1/4W  |
| R716 | 1-216-049-00 | METAL GLAZE | 1K   | 5%  | 1/10W |
| R717 | 1-247-758-11 | CARBON      | 3.3K | 5%  | 1/2W  |
| R718 | 1-247-758-11 | CARBON      | 3.3K | 5%  | 1/2W  |
| R719 | 1-247-758-11 | CARBON      | 3.3K | 5%  | 1/2W  |
| R720 | 1-216-463-00 | METAL OXIDE | 12K  | 5%  | 2W F  |
| R721 | 1-216-463-00 | METAL OXIDE | 12K  | 5%  | 2W F  |
| R722 | 1-216-463-00 | METAL OXIDE | 12K  | 5%  | 2W F  |
| R726 | 1-202-719-00 | SOLID       | 1M   | 10% | 1/2W  |
| R727 | 1-202-838-00 | SOLID       | 100K | 10% | 1/2W  |
| R729 | 1-216-348-00 | METAL OXIDE | 0.82 | 5%  | 1W F  |
| R731 | 1-202-719-00 | SOLID       | 1M   | 10% | 1/2W  |
| R734 | 1-216-033-00 | METAL GLAZE | 220  | 5%  | 1/10W |
| R735 | 1-216-033-00 | METAL GLAZE | 220  | 5%  | 1/10W |
| R736 | 1-247-815-91 | CARBON      | 220  | 5%  | 1/4W  |
| R744 | 1-249-421-11 | CARBON      | 2.2K | 5%  | 1/4W  |
| R745 | 1-249-421-11 | CARBON      | 2.2K | 5%  | 1/4W  |
| R746 | 1-249-421-11 | CARBON      | 2.2K | 5%  | 1/4W  |

**< VARIABLE RESISTOR >**

|       |              |                            |
|-------|--------------|----------------------------|
| RV703 | 1-230-641-11 | RES, ADJ, METAL GLAZE 2.2M |
| RV704 | 1-230-641-11 | RES, ADJ, METAL GLAZE 2.2M |

\*\*\*\*\*

The components identified by shading and marked **A** are critical for safety.  
Replace only with the part number specified.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

| REF.NO.  | PART NO.                      | DESCRIPTION  | REMARK   | REF.NO. | PART NO. | DESCRIPTION | REMARK                            |
|--|-------------------------------|--|--|---------|----------|-------------|-----------------------------------|
| MISCELLANEOUS                                  |                               |  |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
|  | 1-426-145-21                  | COIL, DEGAUSSING                                     |  |         |          |             | ACCESSORIES AND PACKING MATERIALS |
|  | 1-452-032-00                  | MAGNET, DISK; 10MM Ø                                 |  |         |          |             | *****                             |
|  | 1-452-094-00                  | MAGNET, ROTATABLE DISK; 15MM Ø                       |  |         |          |             |                                   |
|  | 1-452-277-13                  | MAGNET, BMC  |  |         |          |             |                                   |
|  | 1-453-186-11                  | TRANSFORMER ASSY, PFLYBACK                           | (KV-1130/072A)                                 |         |          |             |                                   |
| (KV-1130/072A)                                 |                               |  |  |         |          |             |                                   |
|  | 1-504-899-11                  | SPEAKER (9x5CM)                                      |  |         |          |             |                                   |
|  | 1-540-007-11                  | CAP ASSY, HIGH VOLTAGE                               |  |         |          |             |                                   |
|  | 1-571-433-21                  | SWITCH, PUSH (AC POWER)                              |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
|  | 1-690-270-11                  | CORD, POWER (WITH CONNECTOR)                         |  |         |          |             |                                   |
|  | 2. 5A/250V                    | (KV-M1450A/M1451A/M1450B/M1451B/M1450E/M1451E)       |  |         |          |             |                                   |
|  | 1-690-270-21                  | CORD, POWER (WITH CONNECTOR)                         |  |         |          |             |                                   |
|  | 2. 5A/250V                    | (KV-M1450K/M1451K)                                   |  |         |          |             |                                   |
|  | 1-590-450-11                  | CORD, POWER (WITH CONNECTOR)                         |  |         |          |             |                                   |
|  | 7. 0A/250V (KV-M1450D/M1451D) |  |  |         |          |             |                                   |
|  | 1-590-752-11                  | CORD, POWER (WITH PLUG)                              |  |         |          |             |                                   |
|  | 2. 5A/250V (KV-M1450U/M1451U) |  |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
|  | 1-693-303-11                  | TUNER (TELELX001A) (KV-M1450A/M1451A)                |  |         |          |             |                                   |
|  | 1-693-310-11                  | TUNER (TELELX002A) (KV-M1450B/M1451B)                |  |         |          |             |                                   |
|  | 8-598-331-00                  | TUNER (BT-AC401)<br>(KV-M1450D/M1451D/M1450E/M1451E) |  |         |          |             |                                   |
|  | 1-693-302-11                  | TUNER (UV1315) (KV-M1450K/M1451K)                    |  |         |          |             |                                   |
|  | 1-693-301-11                  | TUNER (UV1343) (KV-M1450U)                           |  |         |          |             |                                   |
|  | 8-598-333-00                  | TUNER (BT-AU601) (KV-M1451U)                         |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
|  | 8-451-249-84                  | DEFLECTION TUBE (STANDAR                             |  |         |          |             |                                   |
|  | 8-735-561-85                  | PICTURE TUBE (SD-125) (A34UB016X)                    |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
|  | *4-203-024-11                 | CUSHION (UPPER) (ASSY)                               | (KV-M1450A/M1451A/M1450B/M1451B/M1450E/M1451E) |         |          |             |                                   |
|  | *4-203-024-01                 | CUSHION (UPPER) (ASSY)                               | (KV-M1450D/M1451D/M1450K/M1451K/M1450U/M1451U) |         |          |             |                                   |
|  | *4-203-025-11                 | CUSHION (BOTTOM) (ASSY)                              | (KV-M1450A/M1451A/M1450B/M1451B/M1450E/M1451E) |         |          |             |                                   |
|  | *4-203-025-01                 | CUSHION (BOTTOM) (ASSY)                              | (KV-M1450D/M1451D/M1450K/M1451K/M1450U/M1451U) |         |          |             |                                   |
|  | *4-203-099-01                 | INDIVIDUAL CARTON                                    | (KV-M1450A/M1451A/M1450B/M1451B/M1450E/M1451E) |         |          |             |                                   |
|  | *4-203-023-01                 | INDIVIDUAL CARTON                                    | (KV-M1450D/M1451D/M1450K/M1451K/M1450U/M1451U) |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
| REMOTE COMMANDER                               |                               |  |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |
| 1-473-194-11 COMMANDER, STANDARD TYPE (RM-836) |                               |  |  |         |          |             |                                   |
| *****  |                               |  |  |         |          |             |                                   |

7290

# SERVICE MANUAL

**BE-4 CHASSIS**

| MODEL     | COMMANDER | DEST.   | CHASSIS NO. | MODEL     | COMMANDER | DEST.   | CHASSIS NO. |
|-----------|-----------|---------|-------------|-----------|-----------|---------|-------------|
| KV-M1450A | RM-836    | Italian | SCC-H64E-A  | KV-M1450E | RM-836    | Spanish | SCC-H66C-A  |
| KV-M1451A | RM-836    | Italian | SCC-H64D-A  | KV-M1451E | RM-836    | Spanish | SCC-H66D-A  |
| KV-M1450B | RM-836    | French  | SCC-H65C-A  | KV-M1450K | RM-836    | OIRT    | SCC-H52E-A  |
| KV-M1451B | RM-836    | French  | SCC-H65D-A  | KV-M1451K | RM-836    | OIRT    | SCC-H52D-A  |
| KV-M1450D | RM-836    | AEP     | SCC-H46E-A  | KV-M1450U | RM-836    | UK      | SCC-H50D-A  |
| KV-M1451D | RM-836    | AEP     | SCC-H46D-A  | KV-M1451U | RM-836    | UK      | SCC-H50C-A  |

## SUPPLEMENT - 1

**SUBJECT : CHANGE OF PART NUMBERS**

File this supplement with the service manual

**INTRODUCTION : Change in part numbers for KV-M1450D/M1451D/M1450K/  
M1451K with serial number beginning at 3000001.**

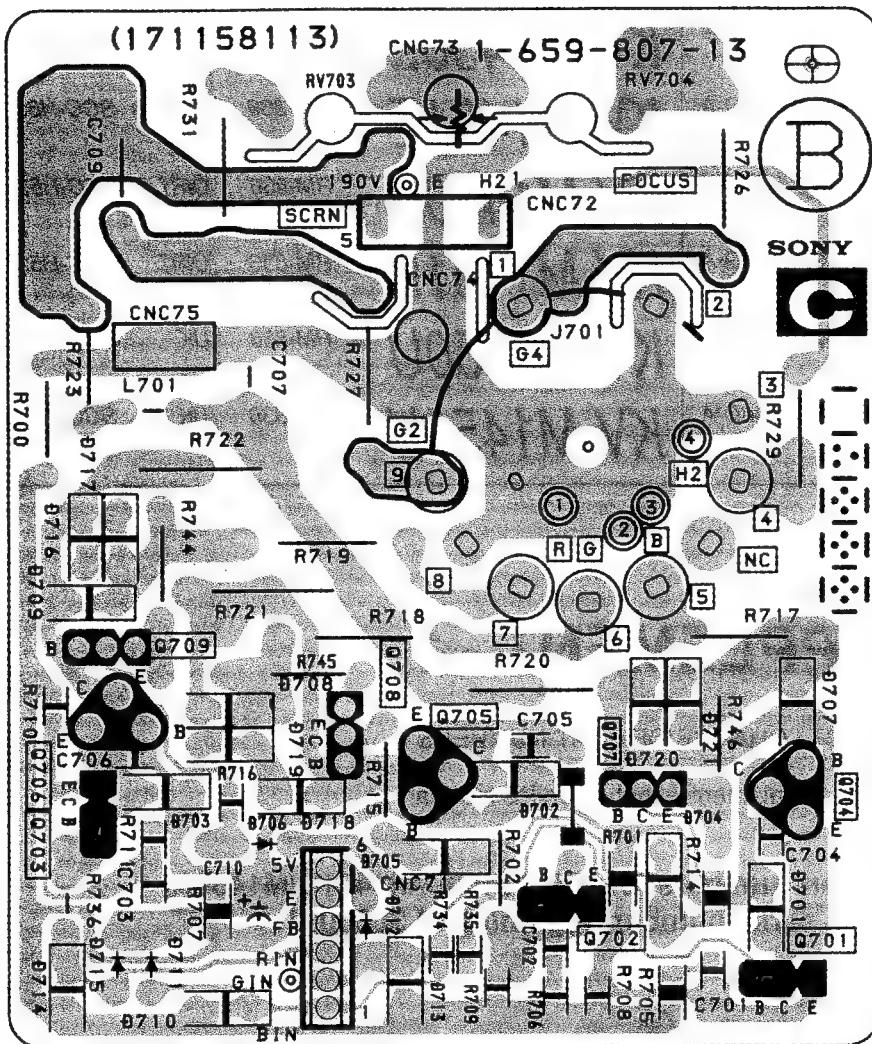
| <i>Section</i>                                    | <i>Title</i> | <i>Page</i> |
|---|--------------|-------------|
| <b>5. DIAGRAMS</b>                                |              |             |
| 5-3. Schematic Diagrams and Printed Wiring Boards |              |             |
| * C Board .....                                   | 2            |             |
| * A Board .....                                   | 4            |             |
| <b>6. EXPLODED VIEWS</b>                          |              |             |
| 6-1. Chassis and Picture Tube .....               | 6            |             |
| <b>7. ELECTRICAL PARTS LIST</b> .....             | 7            |             |



**TRINITRON® COLOR TV  
SONY®**

**C**

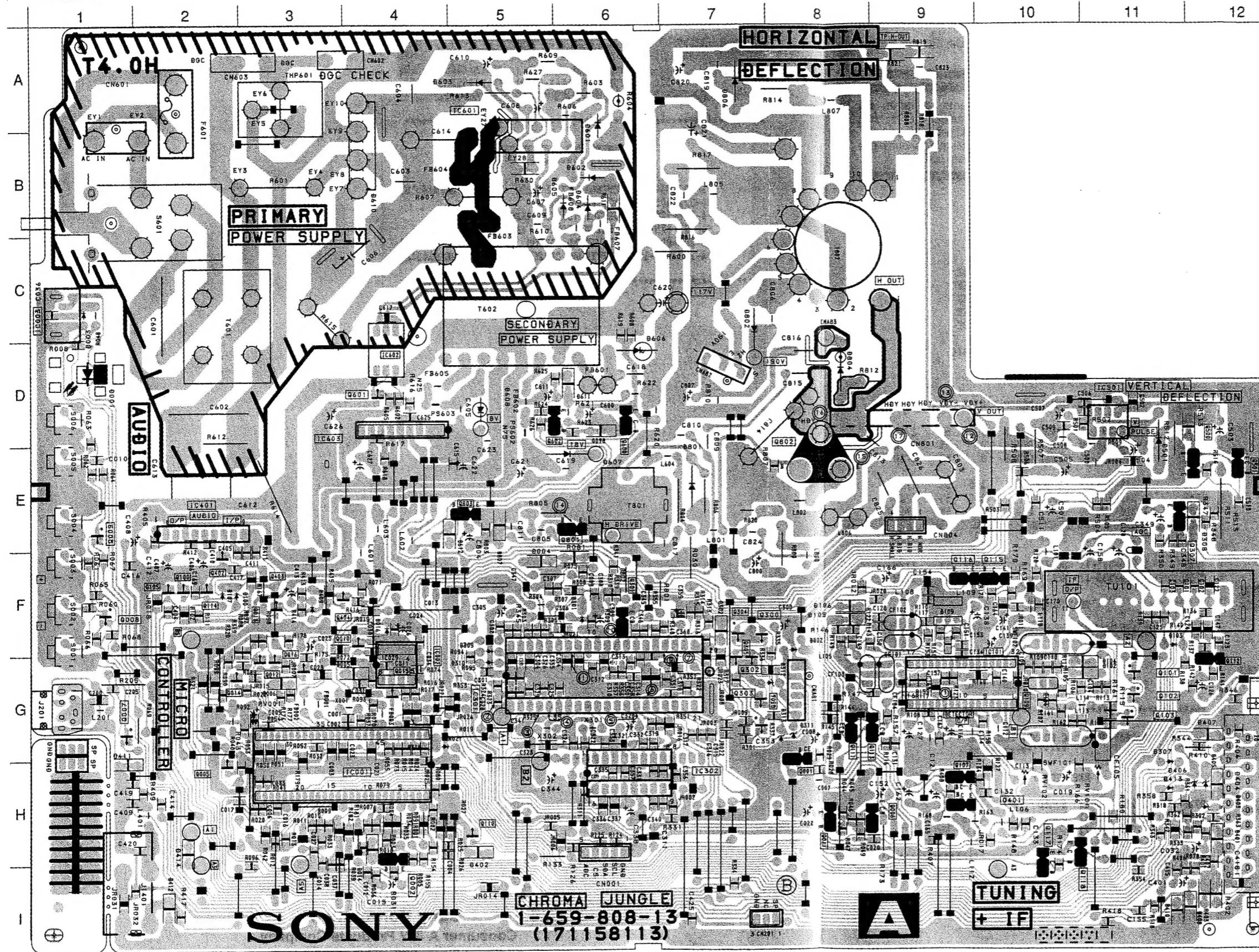
[ R.G.B OUT ]

**C BOARD****A BOARD**

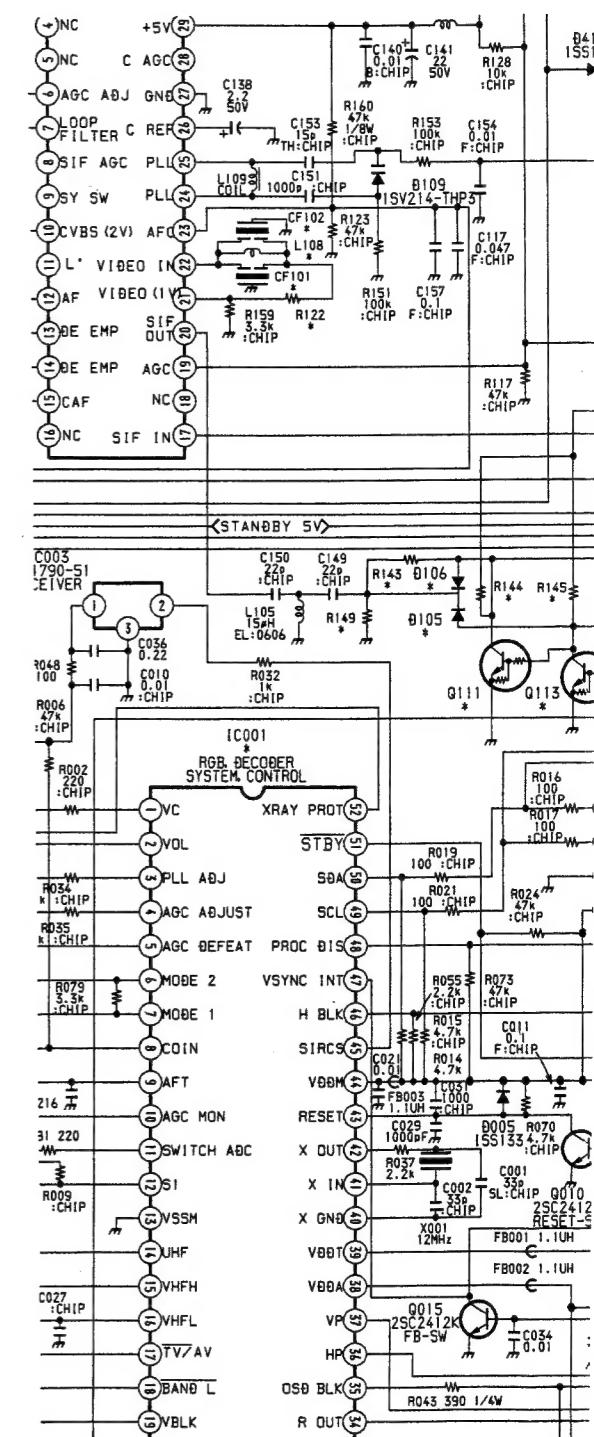
| IC    |      |           |
|-------|------|-----------|
| IC001 | H-4  | Q801 E-6  |
| IC002 | F-4  | Q802 D-8  |
| IC003 | C-1  | Q803 E-5  |
| IC101 | G-10 |           |
| IC301 | G-5  |           |
| IC302 | H-7  | D001 D-1  |
| IC401 | E-2  | D002 F-8  |
| IC501 | D-11 | D004 E-5  |
| IC601 | A-5  | D005 G-4  |
| IC603 | D-3  | D006 G-3  |
|       |      | D014 I-4  |
|       |      | D100 F-3  |
|       |      | D105 F-8  |
|       |      | D106 F-8  |
|       |      | D107 F-2  |
|       |      | D109 F-9  |
|       |      | D301 F-6  |
|       |      | D302 F-7  |
|       |      | D310 G-5  |
|       |      | D315 G-5  |
|       |      | D401 H-12 |
|       |      | D402 H-5  |
|       |      | D403 H-12 |
|       |      | D404 H-12 |
|       |      | D405 H-12 |
|       |      | D406 G-11 |
|       |      | D407 G-12 |
|       |      | D408 I-12 |
|       |      | D409 F-3  |
|       |      | D410 I-11 |
|       |      | D414 H-2  |
|       |      | D501 D-11 |
|       |      | D600 D-6  |
|       |      | D601 A-6  |
|       |      | D602 B-6  |
|       |      | D603 A-5  |
|       |      | D604 B-6  |
|       |      | D605 B-6  |
|       |      | D606 C-6  |
|       |      | D607 E-6  |
|       |      | D608 D-5  |
|       |      | D610 B-4  |
|       |      | D611 D-6  |
|       |      | D802 C-7  |
|       |      | D804 D-8  |
|       |      | D806 A-7  |
|       |      | D807 E-5  |

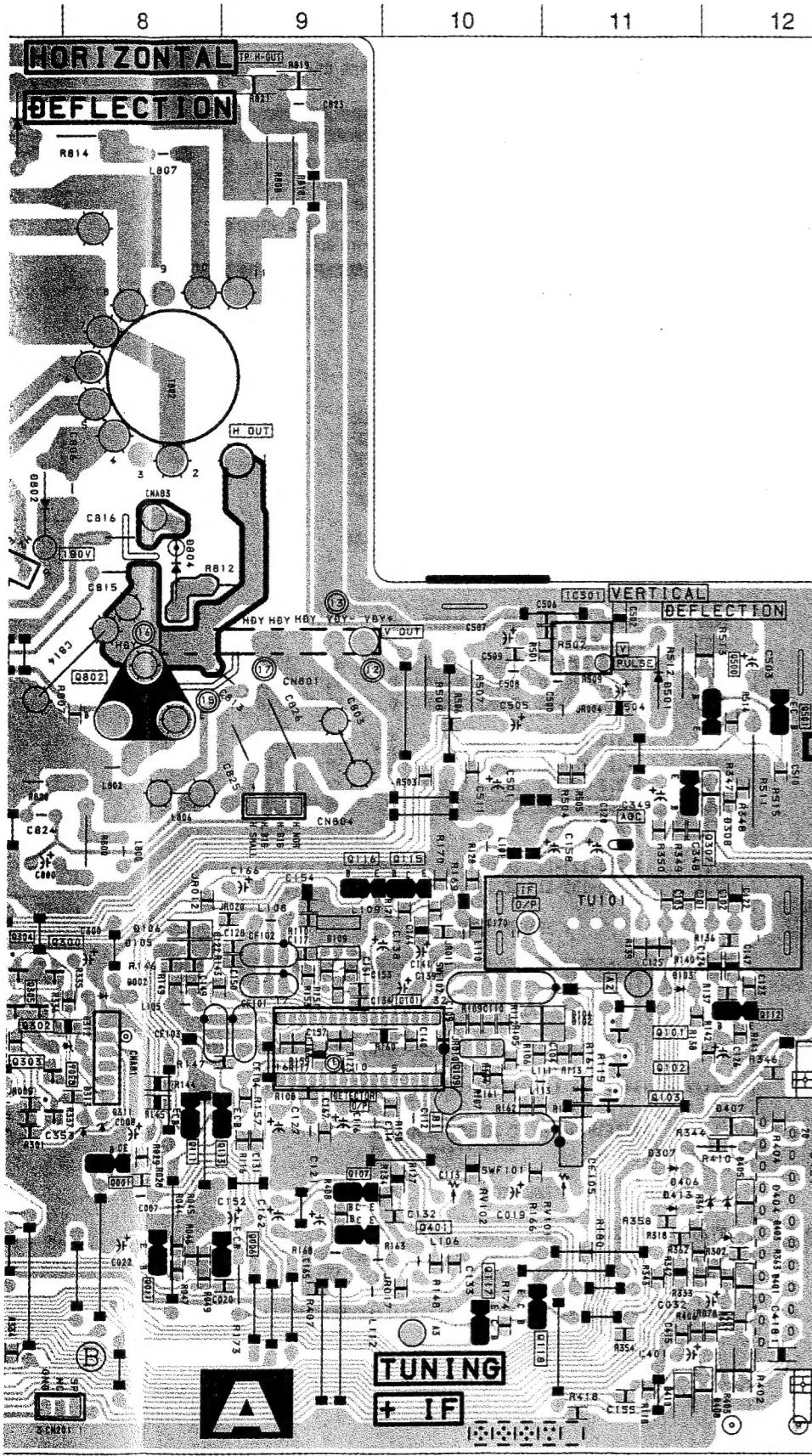
**A** SYSTEM CONTROL, HORIZONTAL OUTPUT,  
VERTICAL OUTPUT, CHROMINANCE,  
POWER, AUDIO

## A BOARD

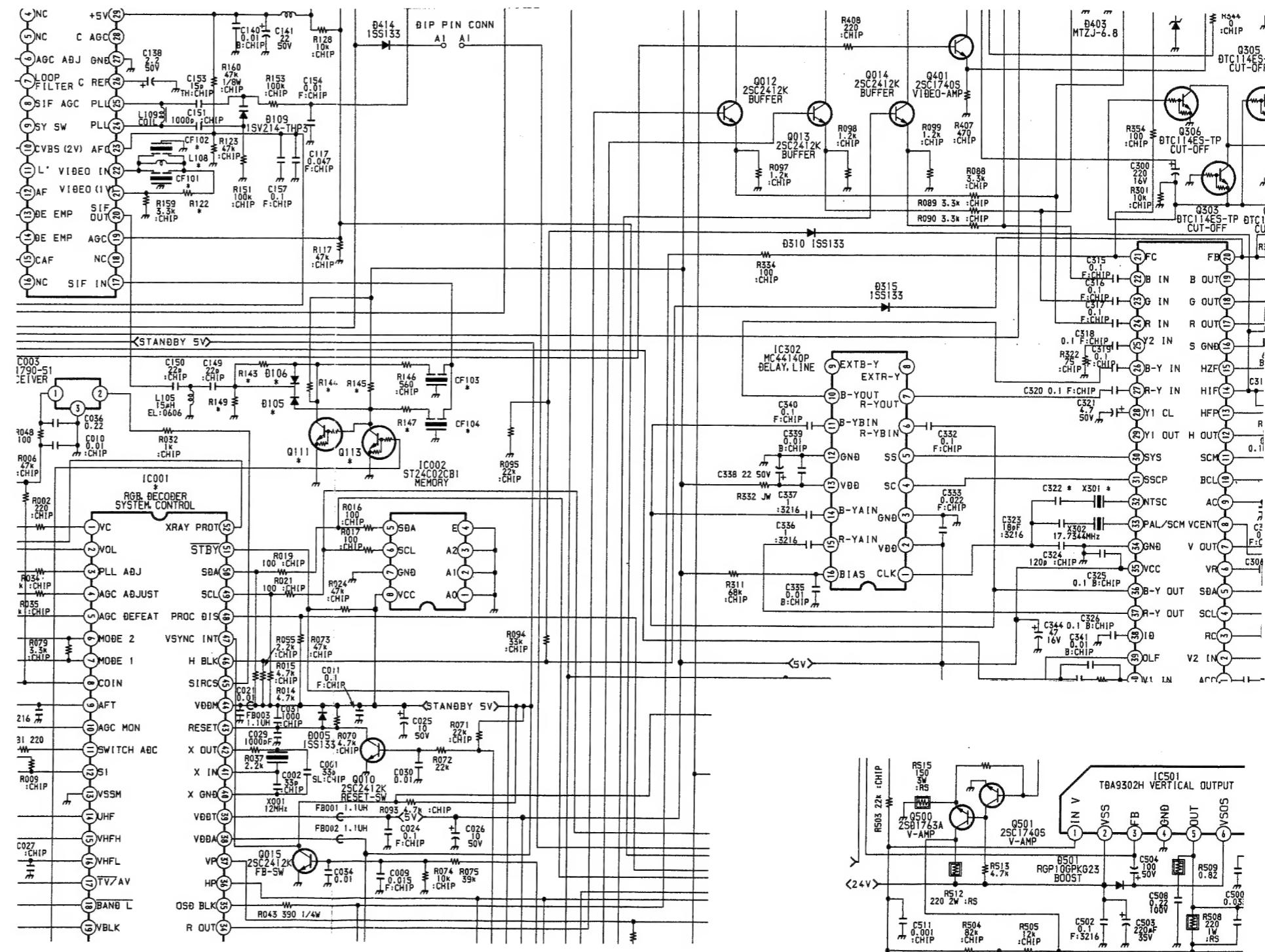


## A BOARD





A BOARD



A BOARD \* MARK

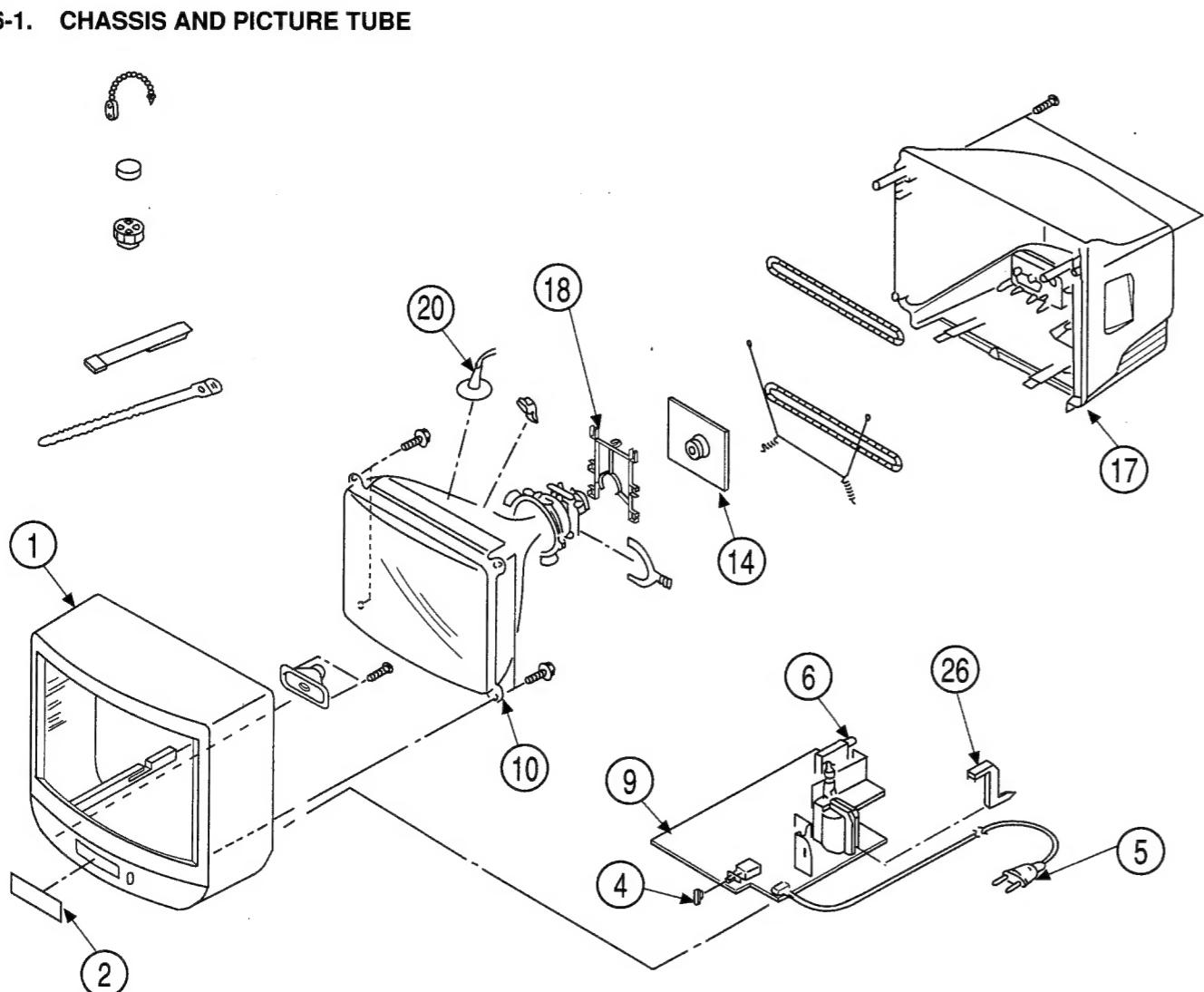
| Model<br>Ref. No. | M1450D     | M1451D     | M1450K | M1451K |
|-------------------|------------|------------|--------|--------|
| C016              | —          | 0.47MF     | —      | 0.47MF |
| C017              | —          | 0.47MF     | —      | 0.47MF |
| C120              | 470MF      | 470MF      | 220MF  | 220MF  |
| R147              | —          | —          | 560    | 560    |
| TU101             | TELE4-002B | TELE4-002B | U1315  | U1315  |

## **SECTION 6**

# **EXPLODED VIEWS**

## **NOTE**

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.



| REF NO | PART NO       | DESCRIPTION  | REMARK |
|--------|---------------|--|--------|
| 1      | X-4200-194-3  | BEZNET, ASSY   |        |
| 2      | 4-203-014-31  | WINDOW, ORNAMENTAL (KV-M1450K)                               |        |
|        | 4-203-014-21  | WINDOW, ORNAMENTAL (KV-M1451K)                               |        |
| 4      | 4-203-020-01  | BUTTON, POWER  |        |
| 5      | 1-690-270-21  | CORD, POWER (WITH CONNECTOR)<br>2.5A/250V (KV-M1450D/M1451D) |        |
| 6      | 1-693-310-11  | TUNER (TELE4X-002B) (KV-M1450D/M1451D)                       |        |
| 9      | *A-1666-012-A | A AND C BOARD, COMPLETE (KV-M1450D)                          |        |
|        | *A-1666-005-A | A AND C BOARD, COMPLETE (KV-M1451D)                          |        |
|        | *A-1666-050-A | A AND C BOARD, COMPLETE (KV-M1450K)                          |        |
|        | *A-1666-048-A | A AND C BOARD, COMPLETE (KV-M1451K)                          |        |
| 10     | 8-735-562-05  | PICTURE TUBE (NO. 125) (14 INCHES)                           |        |
| 14     | *A-1638-064-A | C BOARD, COMPLETE<br>(KV-M1450D/M1451D/M1450K/M1451K)        |        |

The components identified by shading and marked  are critical for safety.  
Replace only with the part number specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite.  
Ne les remplacer que par une piece portant le numero specifie.

SECTION 7

## ELECTRICAL PARTS LIST

When indicating parts by reference number, please include the board name.

- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

The components identified by shading and marked **▲** are critical for safety.  
Replace only with the part number specified.

Les composants identifies par une trame et une marque A sont critiques pour la securite.  
Ne les remplacer que par une piece portant le numero specifie.

Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

The components identified by shading and marked **A** are critical for safety.  
Replace only with the part number specified.

| REF.NO.   | PART NO.                     | DESCRIPTION        | REMARK | REF.NO. | PART NO. | DESCRIPTION | REMARK |
|---|------------------------------|--------------------|--------|---------|----------|-------------|--------|
| <b>MISCELLANEOUS</b><br>*****                     |                              |                    |        |         |          |             |        |
| 1-540-007-12                                      | CAP ASSY, HIGH-VOLTAGE       |                    |        |         |          |             |        |
| 1-690-270-21                                      | CORD, POWER (WITH CONNECTOR) |                    |        |         |          |             |        |
|   | 2.5A/250V                    | (KV-M1450D/M1451D) |        |         |          |             |        |
| 1-693-310-11                                      | TUNER (TELE4X-002B)          | (KV-M1450D/M1451D) |        |         |          |             |        |
| 8-735-562-05                                      | PICTURE TUBE (SD-125)        | (A34JBU70X)        |        |         |          |             |        |
| *****   |                              |                    |        |         |          |             |        |
| <b>ACCESSORIES AND PACKING MATERIALS</b><br>***** |                              |                    |        |         |          |             |        |
| 1-501-840-11                                      | ANTENNA, TELESCOPIC          | (KV-M1450K/M1451K) |        |         |          |             |        |
| *4-039-905-02                                     | BAG, PROTECTION              |                    |        |         |          |             |        |
| *4-203-024-11                                     | CUSHION (UPPER) (ASSY)       |                    |        |         |          |             |        |
| *4-203-025-11                                     | CUSHION (BOTTOM) (ASSY)      |                    |        |         |          |             |        |
| *4-203-099-11                                     | INDIVIDUAL CARTON            | (KV-M1450D/M1451D) |        |         |          |             |        |
| *4-203-077-11                                     | INDIVIDUAL CARTON            | (KV-M1450K/M1451K) |        |         |          |             |        |
| *****   |                              |                    |        |         |          |             |        |

Sony Corporation  
Consumer A & V Products Company  
TV & Display Products Div.

9-974-909-81

English  
96CP7158-1  
Printed in U.K.  
© 1996.3